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Bechuanaland Protectorate

ANNUAL MEDICAL & SANITARY REPORT

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FOR THE YEAR 1960

BUREAU OF HYGIENE & TROPICAL DISEASES
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Pages 30 and 41 are missing from this report.

The map between pages 4 and 5 should have been shown as Page 30.

The map between pages 39 and 40 should have been shown as Page 41.

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BECHUANALAND PROTECTORATE

ANNUAL MEDICAL

AND

SANITARY REPORT

FOR THE YEAR 1959

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BECHUANALAND PROTECTORATE

ANNUAL MEDICAL

AND

SANITARY REPORT

FOR THE YEAR 1959

SECTION I - ADMINISTRATION

1 STAFF

DIVISION I

	Director of Medical Services
1	Medical Officer of Health
1	Senior Medical Officer
13	Medical Officers

DIVISION II

1	Administrative Assistant
3	Health Inspectors
2	Field Officers
1	Matron
1	Sister-Tutor
4	Sisters-in-Charge
10	Nursing Sisters
1	Nursing Sister (District)
1	Housekeeper
2	Clerks
2	Lady Clerks
1	Senior Sanitary Inspector
1	Senior Staff Nurse

DIVISION III

9	Health Assistants
7	Clerks
28	Dispensers
1	Microscopist
7	Sanitary Inspectors
1	Pupil Sanitary Inspector
4	Rodent Assistants
15	Medical Orderlies
42	Staff Nurses
40	Probationer Nurses
8	Male Nurses
4	Male Attendants (Mental Home)
3	Female Attendants (Mental Home)
11	Cooks
11	Drivers
6	Lorry Labourers

10 Gardener/Messengers......

10	Gardener/Messengers
5	Launderers
83	General Duty Assistants

At the end of 1959 there were two vacant posts for Medical Officers and three for Nursing Sisters.

2. VISITORS:

Dr. K.A.T. Martin,	World Health Organization, Nairobi.
Mr. Perry O. Hansen, Jnr.,	UNICEF, Kampala
Dr. J.S. Weiner,	Department of Anatomy, Oxford
Professor P.V. Tobias,	Department of Anatomy, University of the Witwatersrand.
Dr. H.J. Heinz,	S.A. Institute for Medical Research
Dr. C.H. Wyndham,	Chamber of Mines Laboratory of Applied Physiology.

3. LEGISLATION:

Proclamation No. 74 of 1959 - Sleeping Sickness (Amendment) Proclamation, 1959

Government Notice No. 25 of 1959 - Habit-Forming Drugs, Methadone and Normethadone.

SECTION II - PUBLIC HEALTH

1. STAFF:

DIVISION I

1	Medical Officer of Health

DIVISION II

3	Health Inspectors
2	Field Officers
1	Senior Sanitary Inspector

DIVISION III

3	Health Assistants
8	Sanitary Inspectors
4	Rodent Assistants.

One Health Assistant occupied on Public Health work and two Sanitary Inspectors were employed with funds provided from Colonial Development and Welfare grants. Three Health Inspectors' posts were approved in the 1959 estimates but housing and office accommodation for these officers was not available at Maun. The Field Officer at Maun carried out health inspection work during the year.

African/........

African Sanitary Inspectors were posted at Maun, Palapye, Mahalapye, Serowe, Francistown and Lobatsi, and Health Assistants in the Inspectors' offices at Francistown and Lobatsi.

In the absence of permanent clerical assistance a temporary Lady Clerk worked from the middle of August until the end of the year in the Medical Officer of Health's office at Mafeking. This enabled the Medical Officer of Health to begin to record and make use of information collected over nearly four years.

2. Finance: Approved estimates were :-

Public Health Measures:	Insecticides	£3,000
	Equipment	450
	Labour	2,000
	Vaccines	450
	Propaganda	100
Sanitation:	Materials	700
	Labour	2,700
	Incidentals	100
	Construction	500

In addition to the above, a Special Warrant to the value of £800 was obtained to purchase a relief tractor for refuse removal at Lobatsi.

3. Food Inspection. The Divisional Health Inspectors made regular inspections of premises where food was offered for sale. Inspection of Hotels was carried out by the Medical Officer of Health and the Health Inspectors. Recommendations derived from those inspections were dealt with by the Liquor Licensing Courts in the localities concerned. Renewals of licences were made subject to completion of repairs, redecoration and, in some instances, of building alterations throughout the premises.

Facilities provided at Hotels have improved considerably over the last four years.

4. Meat Inspection: Meat inspection was carried out by Public Health personnel at Francistown, Serowe, Maun, Mahalapye and Palapye. At Lobatsi, both in the Town Abattoir and in the Colonial Development Corporation Export Abattoir, meat inspection was dealt with by the Veterinary Department.

At Francistown and Lobatsi there are small Government abattoirs. In all other villages meat is slaughtered in the open at "slaughter poles".

At Serowe village the concentration of nine privately owned "slaughter poles" into one approved abattoir was considered.

During the latter half of the year the Veterinary Department took over meat inspection from the Public Health branch of the Medical Department.

5. Dairy Produce Inspection: Inspections at the Creamery in Francistown and at the local dairies where cream is collected for transportation to the Creamery are carried out by the officers of the Agricultural Department.

At present the sale of milk is uncontrolled and milk itself is not inspected before sale to the public. (Dairy farmers' premises are, however, inspected by Dairy

Inspectors employed by the Agricultural Department).

6. Sanitary and Refuse removal services: These services are provided by Government on most Government stations and townships in the territory. At Francistown the Tati Company maintain a refuse and sanitation disposal and street sweeping service. The Railways Administration at Mahalapye cater for the needs of the comparatively large Railways establishment.

There are virtually no organised services of this nature in the Tribal Territories, although in Serowe the Tribal Administration provide a sanitation service for schools and a similar service is provided at Molepolole.

7. DISEASES QUARANTINABLE ACCORDING TO INTERNATIONAL SANITARY REGULATIONS.

Cholera. This disease has not been reported for many years and was not diagnosed in the Protectorate during 1959.

Plague. No human cases were seen or reported from the territory, neither were rodent infections recorded or found by survey. No rodent parasites were found to be infected with Pasturella pestis in specimens forwarded to the South African Institute for Medical Research, Johannesburg. Three Field Officers, trained in field rodent control technique, were frequently on tour with African teams. From a base at Machaneng the middle eastern section was covered; from Gaberones the south-eastern section was watched; from Maun almost the whole year was spent by a Field Officer and team touring Ngamiland, the Chobe district and the Kalahari to Werda and Tshabong in the south. No significant unexplained activity or movements of field rodents, nor any unusual death rates were noted by these workers among field rodents in the Protectorate. Some of the specimens collected during the rodent surveillance circuits based on Maun were identified at the Medical Research Institute, Johannesburg and are listed at Appendix "A".

Relapsing and Typhus Fevers. Fevers of louse-borne origin were not reported. Relapsing fever transmitted by the blind tick Ornithodorous moubata was diagnosed five times in the Maun area of the Protectorate, and tick-borne typhus was reported five times also.

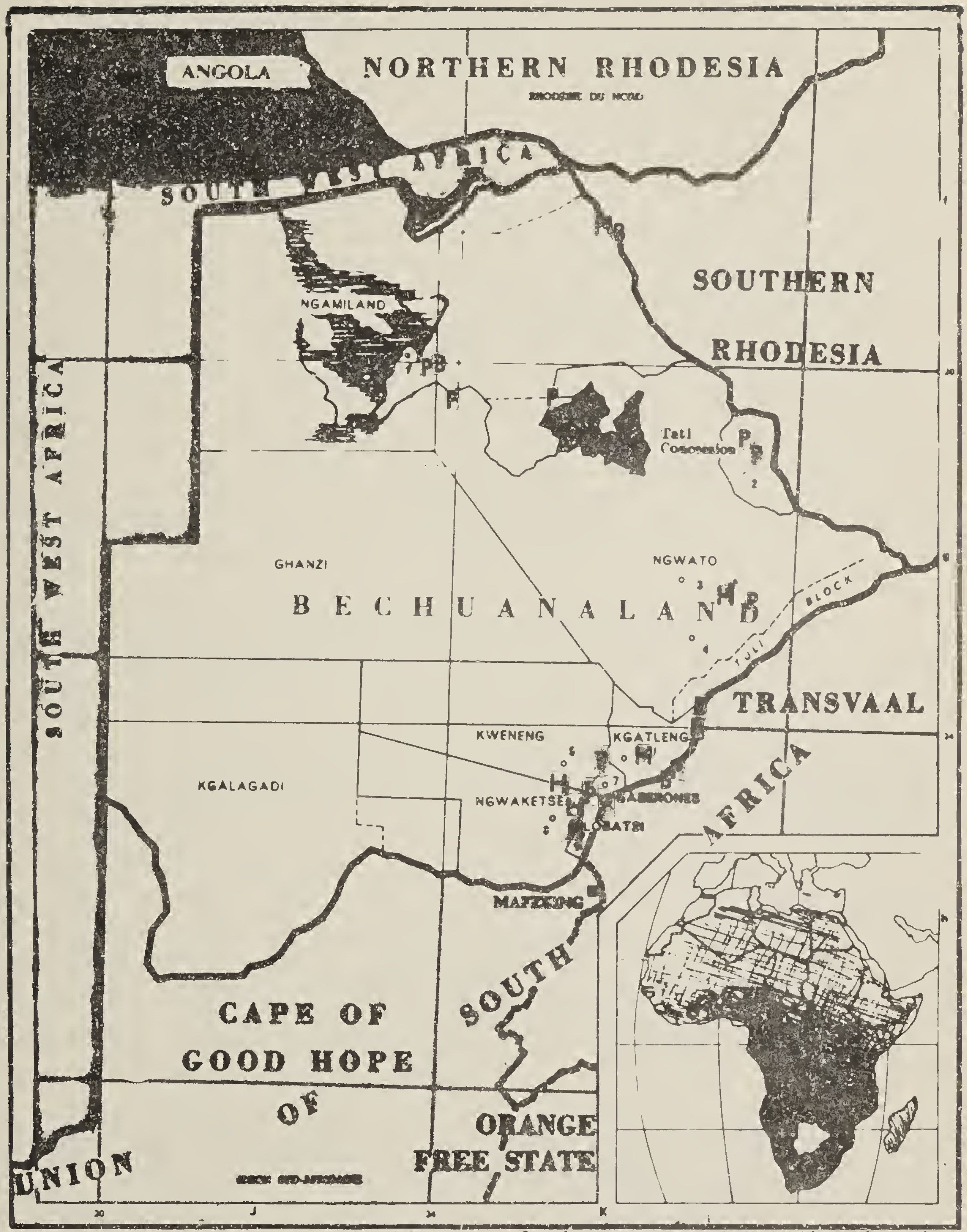
Smallpox. Two cases only were diagnosed in the eastern Ngwato, in one of which the infection was of extra-territorial origin. No doubt the very low population density is a powerful prophylactic agent. The few cases reported during 1959 occurred near the eastern traffic routes which serve more populous communities in the north and in the south. Adjacent administrative divisions of Southern Rhodesia continued to report cases from which it is believed the infections reached Bechuanaland. Appendix "C" shows the number of vaccinations carried out in 1959.

Yellow Fever. No cases were reported from this part of the African receptive area in 1959. The Amaryl x potentialities of Northern Bechuanaland were surveyed by Dr. Smithburn and others in 1945 and by Dr. J.H.S. Gear in 1949, both teams working on the serological indications. During 1959 the Rockefeller Foundation team under Dr. R.H. Kokernot again surveyed indication of virus diseases present in the northern Protectorate. The latest conclusions are that Yellow Fever is not endemic in or near Bechuanaland but that

seasonal/........

BECHUANALAND BILHARZIA SURVEY

Progress Report for 1959



Showing approximate positions of places named in the first column of Table IV

References:

- 'H' stands for a field survey record of human cases derived from the local B. Physopsis habitat.
- 'P' indicates B. Physopsis carrier snail habitats not yet proved to be sources of infection.
- 'B' shows four places where Biomphalaria pfeifferi are known to habitate.

The survey continues into 1960.

seasonal spread would be possible in the northern swamplands during hot months if the virus were to be introduced from elsewhere.

x - International nomenclature for Yellow Fever

8. NOTES ON OTHER DISEASES

Anthrax. This was reported once only during the year.

Bilharzia. See Appendix "B". 229 cases were reported. Survey work continued during 1959 to define the limits of the sources of infection of bilharzia. A number of examinations for schistosome eggs in children were made in the areas where known snail carriers have been found. A previously unrecorded habitat of Bulinus (Physopsis) globosus and of Biomphalaria pfeifferi was investigated in the headwater tributaries of the Matsetse River near the border of Southern Rhodesia. While on tour the Medical Officer in charge of Maun Hospital had reported finding a high urinary egg rate among school children in the Colonial Development Corporation cattle holding ranch at Panda-ma-Tenga. A list of snails identified in the Bechuanaland Protectorate since 1957 to the end of 1959 is attached at Appendix "B".

School children are seriously infected by Schistosoma haematobium worms only within a distance of a mile from the carrier snail habitats. Physopsis habitats are small and scarce. They are grouped on the eastern and northern sides of the Protectorate. The Okovango delta streams also contain carrier snails of Bulinus Physopsis and of the Biomphalaria species but no cases of S.haematobium nor of S.mansoni were found at Maun during 1959, nor in recent previous years. This is a surprising fact because in Angola the Okovango River is a reported source of bilharziasis and snail carrier species of S.haematobium were found in 1959 in the Botletle River area, but no human cases were found there either. The Botletle River joins the Okovango delta to the Makarikari salt pans. Its vegetation and gentle flow should be ideal for Bilharzia propagation. Its flow depends upon seasonal rains feeding its east and west extremities.

Cerebrospinal Meningitis. 25 cases were diagnosed, mainly from the eastern side of the Protectorate.

Chickenpox. This was fairly evenly distributed throughout the territory. About 400 cases were seen at hospitals with no reported deaths.

Deficiency Diseases. The number of cases of deficiency diseases rose sharply in 1959 to 7,165 with 19 recorded deaths. The Medical Officer at Gaberones reported 106 cases in that area. "The first cases seen were in lactating mothers who developed severe hypochromic mycrocytic anaemia, hypertrophic firm pale gums, pains and weakness in the legs. The number of deaths in the village was estimated at 20 - 30. These cases were probably due to a multiple deficiency and responded very slowly to multi-vitamin and iron therapy, usually taking a month to reach a reasonable stage of recovery. In spite of the poor condition of the mothers, the babies were fit and fat. From the end of November typical cases of classical scurvy, which has only rarely been encountered for many years, were seen in patients of both sexes and all ages, with bleeding

spongy/.......

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

spongy gums, brawny swellings and pains in the legs and lumbar backaches. The first cases were seen at the beginning of October; towards the middle of December, after some rain had fallen, the incidence decreased but at the end of the year, after a dry period, had increased."

All districts reported a rise in cases of malnutrition. The rainy season was a very poor one, some areas receiving practically no rain during the year. Famine relief measures were instituted at Ghanzi and in the northern Kgalagkadi during the dry season of 1959. Further examinations of buccal smears from African school children confirmed the widespread incidence of malnutrition.

Diphtheria totalled 153 reported cases with 15 deaths in hospitals. Gaberones and Mochudi were the main centres of the 1956/57 diphtheria/whooping cough mass prophylactic campaign, which was assisted by Colonial Development and Welfare and UNICEF funds and equipment. Returns in the table below indicate that from other medical centres there was a low incidence or total absence of diphtheria. Some of these centres are situated in areas where field work has not been undertaken on a mass scale against diphtheria. Efforts have been made during a number of years at the main hospital centres in the Protectorate to give prophylactic inoculations against diphtheria to people attending as out-patients, also at maternity and child welfare clinics and at the African schools near the medical centres. Outbreaks reported in districts away from medical centres were visited, whenever staff was available, to give medical assistance where possible and to offer prophylactic inoculation to suitable persons. Whereas the response from the people to the 1956 mass prophylactic campaign against diphtheria and whooping cough was extremely poor in the absence of an outbreak of these diseases, it was easier to obtain a satisfactory percentage of first and second doses in areas where there existed a threat of active spread of these diseases in the years 1957 to 1959.

Diptheria and whooping cough are both endemic in surrounding countries. Considerable numbers of persons move across the Protectorate borders, especially eastwards, to work or trade with the Rhodesias and the Union, returning home after several months. These movements, by road, railway and foot, cannot yet be subjected to a system of disease surveillance accurate enough to prevent re-infection reaching areas cleared of epidemic diseases. The stage of development and the size of the Protectorate prohibit permanent economic maintenance at the percentage of protection levels which mass inoculation should attain when practised on the territorial wide scale envisaged by the World Health Organization eradication propositions.

Notified cases/.......

Notified cases of diphtheria and prophylactic injections were as follows:-

NORTHERN DIVISION

Hospital or Dispensary	Injections	Cases	Deaths
Maun	1,371	2	-
Rakops	-	-	-
Kasane	-	-	-
Tsau	-	-	-
Nokaneng	-	-	-
Shakawe	-	-	-
Sefhophe	18	-	-
Francistown	342	68	10
Totome	-	-	-
Tonota	-	1	-
Mahalapye	93	4	-
Serowe	97	18	-
Palapye and out-lying clinics	8	3	-
Madinare	-	-	-
Ghanzi	245	-	-
Kalkfontein	-	-	-
SOUTHERN DIVISION			
Lobatsi	26	11	1
Tshabong	-	-	-
Kanye	848	42	4
Ramoutsa	-	-	-
Khale	-	-	-
Molepolole	-	3	-
Mochudi	-	-	-
Gaberones	40	-	-
Derdepoort	-	1	-
Total:	3,088	153	15

Dysentery. 1,155 cases were reported, of which 233 were classified as bacillary, 246 amoebic and 676 unspecified.

Influenza. This disease was notified from all over the Protectorate. One death in 364 hospital in-patients was the only casualty recorded out of 4,900 cases reported.

Leprosy. Forty-six cases were notified, nearly all from Ngamiland. The majority of these were old cases which had been reported in previous years.

Malaria. (see Appendix "D"). 3,115 cases were reported with 4 deaths in hospital.

Since the appointment on contract in 1955 of a Medical Officer of Health to the Protectorate's medical staff, it has been possible to examine the malaria situation more closely. A general assessment of the situation was possible in 1958. Strong pressure in 1958 by the World Health Organization on malaria eradication lines, combined with a request from the Northern Transvaal Health Authority

to send/.......

to send observers into the Bamangwato district and to assess malarial incidence there for Union Health Department purposes, decided Government to set up a field station in 1959 near Machaneng, for the purpose of carrying out malarial and other medical field surveys and, if possible, to take control measures.

The facts collected by the Public Health section during 1959 were strongly influenced by climatic conditions which have built up an increasingly dry state during recent years along the eastern frontiers of the Protectorate and especially so during 1959. Information collected during the year included a large number of observations on the seasonal condition of mosquito breeding facilities in rivers, natural ponds and artificial dams. Adult mosquito incidence has been recorded by test spraying, hand searching and exposure of persons to mosquito bites at and after dusk. A few spleen rate examinations and some blood slides by age groups were recorded during 1959.

To provide sound information on which to base future estimates of costs a series of hut counts were made along the eastern boundary of the Protectorate. Information was collected on transport facilities, population distribution, agricultural irrigation and cattle dams in the Tuli, Lobatsi and Gaberones farming areas. Meteorological records were also examined both for 1959 and for a range of previous years.

An interim assessment of the malaria situation for 1959 in the Bechuanaland Protectorate indicates

(1) that the Protectorate as a whole, south of 23° south latitude, is a malarial receptive area only in years of special climatic sequences which favour re-introduction of Anopheles gambiae from its permanent breeding places outside that area;

(2) that local outbreaks of a few cases of malaria may occur in any wet season due to transport southwards from northern swamp and river flood areas within and north of the Protectorate;

(3) that those localised outbreaks are especially liable to occur along cattle and transport routes in the Kalahari but are not likely to spread beyond a mile or two from any surface water temporarily breeding the infectable mosquitoes, and that in normal years any such small outbreaks of malaria would continue only for brief periods;

(4) that the usual sequence of drought, heat, local storms and frosts is inimical to prolonged life spans of the two major malaria carrying mosquitoes in the Protectorate south of latitude 23° south. Observations in the Limpopo by the Protectorate medical staff suggest that without that accurate control in the Tuli Block there might be considerable risk of annual A. Gambiae invasions in eastern parts of the Bamangwato Tribal Territory. Seasonal malaria in the south-eastern regions might follow. (The conditions described here are subject to continuation of malaria control measures which the Northern Transvaal Health Department has carried out, assisted by the Bechuanaland Protectorate Government, for the mutual protection of both sides of the eastern border with the Union of South Africa). Nevertheless, the existing focus of malaria in these areas probably contaminates wide areas of south Central Africa and merits early attention. Malaria

research/.........

research in the Okavango and Chobe swamp areas has not yet been undertaken on any large scale.

Measles. 2,345 cases with no deaths were recorded. Cases seen by Medical Officers when on tour were reported to produce a high rate of complications. The Medical Officer stationed at Ghanzi made especial note of the high incidence of secondary pneumonia which he found to be associated with an outbreak of measles near the South West Africa border.

Acute Poliomyelitis. Three cases were reported from Maun in Ngamiland with two deaths.

Rabies. Six cases occurred. Rabies appears to be enzootic among wild animals in Ngamiland. There were two human deaths in the Maun area from hydrophobia and in both cases bites on extremities incubated in less than 40 days. Five people were protected at Maun hospital with antirabic vaccine and another 26 persons were protected by vaccine at Shakawe, 18 of them in March and 8 in November, 1959.

Respiratory Diseases. The total number of cases recorded was 35,458 of which 11,119 were due to upper respiratory infections, 8,473 to influenzal infections, 519 to lobar pneumonia, 1,621 to broncho-pneumonia, 207 to atypical and unspecified pneumonias, 8,720 to acute bronchitis and 4,799 to chronic bronchitis.

Trypanosomiasis. Cases among humans were confined during 1959 to Ngamiland. 46 cases were diagnosed, 32 males and 14 females. The sites of the infection were equally distributed, 23 on the west and 23 on the east side of the Okavango swamps. In 1958, 71 cases were treated and they were distributed 47 west and 24 east of the swamps. The distribution of the 1959 cases was :-

Seronga	5	Gomare	3
Nokaneng	9	Tsau	6
Maun	16	Zankuyo	5
Shorobe	2		

12 of these cases were Tsetse Fly Control personnel who operate within the infected fly area. Out of 5 deaths, 4 were very late cases carried over in hospital from 1958.

Tuberculosis. 4,265 cases were recorded with 72 deaths. Of the total, 2,769 cases were due to pulmonary infection, 14 to meningeal, 399 to intestinal and glandular, 139 to bones and joints, whilst 943 were reported as "other forms".

The problem of tuberculosis control was considered by Medical Officers throughout the territory to be the most urgent control project in 1959. Action taken up to the close of 1959 consisted of surveys and the construction of tuberculosis ward blocks at several suitable medical treatment centres throughout the Protectorate. Arising from these survey findings a recommendation was made by the World Health Organization for the institution of a territory-wide anti-tuberculosis vaccination campaign. Several factors delayed the implementation of the campaign during 1959 and, in a modified form, it was scheduled to be carried out in 1960. Following difficulties experienced during the treponematosis and diphtheria/whooping cough campaigns of recent years, the 1959 planning of the projected B.C.G. campaign was finally arranged to begin as a pilot scheme in a selected area in the eastern side of the Protectorate. It carried provision for extension into

other/.....

other areas as may prove to be useful in the light of experiences to be gained by the pilot project. Difficulties of providing and of keeping adequate nursing staffs have delayed full working of the new accommodation for tuberculosis patients in some hospitals and health centres. The appearance of drug resistance has been reported in several cases.

Whooping Cough. There was a total of 1,989 cases. Highest recorded figures were Ramoutsa Mission dispensary with 332 cases. Francistown and Maun medical units noted the next highest numbers. Distances between established medical treatment points, coupled with the seasonal nomadism of low density populations rendered maintenance of artificial protection of young babies by vaccination very difficult in all districts far distant from treatment centres. As with diphtheria, prophylactic vaccination against pertussis was urged at clinics, dispensaries and main hospitals. Officers of the department on tour and on special sorties for the purpose also gave the vaccine to children under five years of age combined with diphtheria prophylactic.

SECTION III - VITAL STATISTICS

TABLE I

Population Statistics

Europeans	3,174	ϕ
Africans	292,755	x
Asiatics	248	ϕ
Coloured	676	ϕ
Total population:	296,853	

ϕ 1956 census (Figures for Africans not yet available)
x 1946 census

TABLE II

European Births and Deaths

Births	138
Births per 1,000	43
Deaths over one year of age	28
Deaths under one year of age	1
Deaths per 1,000	10

(There is no compulsory registration of the births and deaths of Africans)

TABLE III /........

TABLE III

Causes of European deaths

Amyotrophic lateral sclerosis	1
Atelectasis	2
Bronchial asthma (acute heart failure while in status asthmaticus)	1
Burns	1
Carcinoma	2
Cardiac Failure	3
Cerebral thrombosis	1
Chronic bronchitis	1
Congestive cardiac failure	1
Coronary thrombosis	8
Gastro-enteritis	1
Gunshot wound (accident)	1
Intestinal obstruction	1
Pneumonia	4
Pulmonary embolism	1
	29

TABLE IV

Sickness among Government Officials

Accident	1
Amoebiasis	1
Angina Pectoris	3
Appendicitis	8
Arthritis	6
Asthma	1
Bacillary Dysentery	1
Burns	1
Cystitis	1
Duodenal Ulcer	1
Encephalitis	1
Fractures	4
Haemorrhoids	1
Hypertension	1
Inguinal Hernia	1
Injury	2
Malaria	2
Mumps	2
Nephritis	1
Nephrosis	1
Optic Neuritis	1
Otitis	1
Pleurisy	1
Pneumonia	1
Pyelitis	1
Schizophrenia	2
Snake Bite	1
Tuberculosis	3
	51

SECTION IV - MATERNITY AND CHILD WELFARE

3,603 confinements took place in the various hospitals and health centres this year, a rise of nearly 20% over the 1958 figures. 311 complicated cases were admitted and 198 cases of abortion or miscarriage were recorded. Ante-natal attendances numbered 17,733, nearly 3,000 more than

the previous year. Attendances at post-natal clinics was 1,932, a most gratifying increase of more than 250% over the 1958 figures. Child welfare clinic attendances also increased to 3,544, more than four times the number of 1958. The rise in ante-natal, post-natal and child welfare attendances indicates an increasing awareness regarding public health teaching and propaganda.

SECTION V - HOSPITALS AND DISPENSARIES

1. Out-patients: The total number of out-patients recorded was 328,219 of which 215,321 were first attendances. Other attendances for vaccinations, inoculations, examinations etc. totalled 234,720. The total attendances, therefore, numbered 562,939.

2. In-patients: 17,199 in-patients were admitted. At the end of 1959 the number of beds and cots available, both Government and Mission, was 669 beds and 152 cots, an increase of 106 beds and 5 cots over 1958. The increase in the number of beds is mainly due to the provision of further accommodation for tuberculosis patients. (Both out-patient and in-patient figures constitute a record).

Beds and cots were distributed thus:-

	Beds	Cots
Francistown	79	21
Gaberones	44	3
Ghanzi	9	3
Kanye (S.D.A. Mission)	76	6
Khale (R.C. Mission)	4	-
Lobatsi (including Mental Home)	177	30
Madinare (Anglican Church Mission)	14	4
Mahalapye	17	4
Maun	61	4
Maun Maternity Centre (L.M.S. Mission)	12	10
Mochudi (D.R.C. Mission) ..	31	14
Molepolole (U.F.S. Mission) ..	71	16
Ramoutsa (Hermannsburg Mission)	13	-
Serowe	87	37
Tshabong	8	-
Total:	703	152

The Moffat Hospital, Kanye was, most unfortunately, compelled to close down in July owing to shortage of European staff. It is hoped that the loss of beds thus occasioned will be made up by future extensions of the Seventh Day Adventist Mission hospital.

3. Health Centres and Dispensaries. The two new health centres opened during the year at Tshabong and Ghanzi have both made very promising starts. Building was started on another health centre at Rakops; this building should be in use early in 1960. Two other centres at Gaberones and Mahalapye increased their activities during the year. Gaberones dealt with 999 in-patients and 23,247 out-patients, whilst the corresponding figures for Mahalapye were 742 and 29,326.

Resident dispensers or staff nurses are now established

at /.........

at the following centres :-

Kalkfontein
Kasane
Machaneng
Nokaneng
Palapye
Pilikwe
Rakops
Sefhophe
Shoshong
Tshabong
Tsau
Totume

Dispensaries are established at the following centres and visited regularly by a Medical Officer :-

Dikgatlong
Gabane
Good Hope
Gomare
Kachikau
Kalamari
Karakobis
Khumukwane
Kuli
Makalamabedi
Makunda
Mamono
Moeng
Mogobane
Mookane
Nojane
Panda-ma-tenka
Ramoutsa
Satau
Sefhare
Sehitwa
Sepopa
Seronga
Shoshong
Xanaga's

A notable advance is the increase in the number of out-station dispensaries (as distinct from health centres) with resident dispensers or staff nurses. There are now 14 such stations, Government and Mission, compared with 7 in 1957. It is intended that each of these stations shall, in the course of time, become the nucleus for the maintenance of a Health Visitor and District Midwife, on the lines already established in East Africa.

4. Mission Hospitals. There are three mission hospitals at Kanye, Molepolole and Mochudi; a maternity centre at Maun, a health centre at Madinare and four dispensaries - two at Ramoutsa, one at Khale and one at Tonota.

The following centres were visited periodically by mission doctors :-

Digawana
Dutlwe
Ga-Thamaga
Hukuntsi
Kaartlwe
Kakia
Kukong
Lehututu
Lephephe
Letlakeng
Lokwabe
Magwerapitsi
Molopajane
Manyana
Mmangodi
Mmathethe
Mogemani
Moshaneng
Moshupa
Motokwe
Ngware
Ntswelatsu
Ranaka
Selajwe
Tonota
Tsetseng

The total number of medical centres, both Government and mission, including hospitals, health centres and dispensaries, at the end of 1959 was 80 as compared with 49 in 1956.

SECTION VI - GENERAL

1. African Labour Recruitment: The total number of recruits examined and tested in the territory was 23,549 of whom 1,090 were rejected. The total number of recruits air-lifted to and from Nyasaland, Barotseland and Shakawe,

through Francistown was 53,129 with a total of 1,503,802 air miles flown, again without accident. The chief causes of rejection were, as in former years, extreme youth, poor physique and chronic respiratory complaints.

2. Medical examinations on first appointment to Government service totalled 322. An x-ray of the chest is included in each examination.

3. Operations. The total number of operations performed was 3,143 of which 797 were reckoned as major. 3,703 x-ray examinations were conducted.

4. Ophthalmological Clinic. The ophthalmological clinic established at Serowe Hospital is proving its worth and the work is increasing.

5. Nursing Examinations. The results of the 1959 nursing examination results were as follows :-

Examination	Number of Candidates	Passed
First Year General Medical and Surgical	17	16
Second Year General Medical and Surgical	23	20
Third Year General Medical and Surgical	13	12
Final Midwifery	15	15

There was one pass with Honours and there were eight passes with Merit.

6. School Medical Examinations. For the first time since 1944-45 an opportunity arose for detailed school medical examinations to be carried out at Serowe and Palapye. 3,098 school children, in the age range approximately 7 - 16 years - 1,235 boys and 1,863 girls - were examined during 1959. The examination included, besides a clinical one, measurements of heights and weights, together with a limited number of urinary and haematological examinations, and of microscopical scrutiny of buccal smears (Squires[1]).

The following points of interest emerge from the results :-

(1) As a result of the clinical examination 173 (5.6%) of the subjects were referred to the dispensary for attention. Of these patients, 57 suffered from various ophthalmic conditions and no less than 48 from pulmonary signs and symptoms, some of which might have been tubercular.

(2) At Palapye 165 children (45% of the total examined) complained of intermittent haematuria. Of a random sampling of 100 children (1 out of every 3), 35 showed evidence of macroscopic or microscopic haematuria. Clinically these children appeared in good health and there was no significant difference in heights or weights between the infected children and a control group from Serowe. Further, haemoglobin estimates on apparently healthy and on infected children gave no significant difference between results, all being within the range 12.0 - 14.4 gm / Hb100 ml.

(Reference 1. Squires B.T. Cent.Afr.J.Med. 1958 4 3,104-111)

7. Prisons: The new prison at Francistown was completed during the year and the new central prison at Gaberones was nearing completion at the end of the year. Both these establishments provide adequate accommodation for prisoners of both sexes, under much better working conditions than those associated with the old gaols.

Arrangements for medical care and treatment remain the same as in former years. Regular weekly prison inspections are held at all stations where a Government Medical Officer is stationed. Sick parades are held at the same time, but prisoners may report for medical attention whenever there is urgent need. Rations are provided according to a revised diet adopted in 1952 and no complaints were received.

Two prisoners died in hospital during the year; one death was due to pulmonary tuberculosis and the other to thrombosis. The general health of the prison population was good. The proportion of the number of prisoners in hospital to that of the total prison population was less than 1% at all times.

8. Mental Home, Lobatsi: During 1959, 13 patients were admitted and 8 discharged. Three were transferred to Ingutsheni Mental Institute, Bulawayo. At the end of the year there were 30 inmates.

9. Buildings: The following buildings were erected during the year :-

Lobatsi - New Tuberculosis block
Ghanzi - New Health Centre
Francistown - Isolation Block
Tuberculosis Block
African Nurses' Home
Laundry
Serowe - New out-patients' room
African Staff Nurses' quarters
Mahalapye - New Maternity and Ante-Natal Block
Rakops - New Health Centre

10. World Health Organization: No projects were carried out in the territory during 1959.

11. Colonial Development and Welfare Schemes: C. D. & W. Fund Scheme D.3067 (Development of Medical Services) continued during the year. The following items under capital expenditure have still to be completed :-

Three tuberculosis shelters
Dispensary, Gweta
Maternity Unit, Francistown
Health Centre, Rakops
Health Centre, Kasane
Ward Extensions, Serowe
Mortuary, Francistown.

12. Habit-forming drugs: Nine permits were issued during 1959. Drugs imported were as follows:-

Morphine	487.9	grammes
Pethidine	0.5	grammes

13./...........

13. Publications:

Squires, B.T. The Oral Mucosa in Malnutrition.
The Leech, XXIX, 4, 115 Univ.
W.W. Johannesburg

14. Finance: The total revenue from Government hospitals, health centres and dispensaries during 1959 amounted to £16,791. 4. 7d, an increase of £2,207. 5. 1d. over 1958.

The total ordinary expenditure of the department for the financial year ended 31st March, 1960 was as follows:-

Personal Emoluments	£83,879
Upkeep of hospitals and dispensaries ..	29,485
Maintenance of Lunatics	2,972
Pathological Investigations	1,000
Grants to Missions and Union hospitals	3,779
Public Health Measures	5,340
Sanitation	3,353
Office and Incidental Expenses	558
Travelling and Transport	11,114
Bicycles	37
Contribution to C.D. & W. Scheme D.3067	
Development of Medical Services	41,737
Total:	£183,254

The total ordinary revenue of the Bechuanaland Protectorate during the period 1959/60 was £1,302,190 and the proportion of ordinary medical expenditure to ordinary revenue of the territory was just over 14%. The total ordinary expenditure of the Protectorate during the period 1959/60 was £1,914,785 and the proportion of ordinary medical expenditure to ordinary expenditure of the Protectorate was just over 9.5%

Once again it is my privilege to acknowledge the loyalty and devotion to duty of the staff of this department and to thank all those who assisted the department during the year.

B. T. SQUIRES

DIRECTOR OF MEDICAL SERVICES

MAFEKING.

APPENDICES

APPENDIX "A" **SYLVATIC PLAGUE**

Rodent and Flea Identifications.

APPENDIX "B" **BILHARZIA**

Table 1 - Vesicular Infections, 1959.

Table 11 - Snails found and Habitats (1956-1959 inclusive).

Table 111 - Snail habitats in alphabetical order (1956-1959 inclusive).

Table IV - Assessment of relative danger to persons and facilities for treatment or control action existing in 1959.

Table V - and Preamble - Discussion on Bilharzia distribution and its residual damage to the population in four different types of country in the Protectorate in 1959.

APPENDIX "C" **SMALLPOX**

Some Variola Prophylaxis Details, 1959.

APPENDIX "D" **MALARIA**

Table 1 - Malaria cases diagnosed at Bechuanaland Protectorate treatment centres during 1959.

Table 11 - Cases resolved into Districts.

Table 11A - Splenomegaly List.

Table 111 - Map opposite and preamble. Indication from south to north of the group hospital facilities and relative malarial intensity.

Table 1V - Blood slides taken during 1959 in group areas.

Table V - Splenomegaly list in group areas.

APPENDIX "E" Nosological Returns for 1959.

APPENDIX "A"

SYLVATIC PLAGUE SURVEILLANCE

Map readings for the places mentioned in the following table :-

Bain's Drift	S.22.30	E.28.40
Gamare	S.19.20	E.22.09
Kaiserspan	S.18.30	E.24.18
Kasane	S.17.49	E.25.09
Machaneng	S.23.09	E.27.28
Matatane	S.22.18	E.28.45
Mokgosi	S.24.57	E.25.47
Nokaneng	S.19.39	E.22.11
Ramoutsa	S,24.50	E.25.50
Sepopa	S.18.44	E.22.11
Seronga	S.18.48	E.22.24
Tsau	S.20.11	E.22.27
Tsetsebye	S.22.24	E.28.24
Tsodilo Hills	S.18.46	E.21.47
Zankuyo	S.19.38	E.23.46

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SYLVATIC PLAGUE SURVEYS

A list of some of the specimens from the Bechuanaland Protectorate identified and examined at the South African Institute for Medical Research, Johannesburg

- - - - - - - - - -

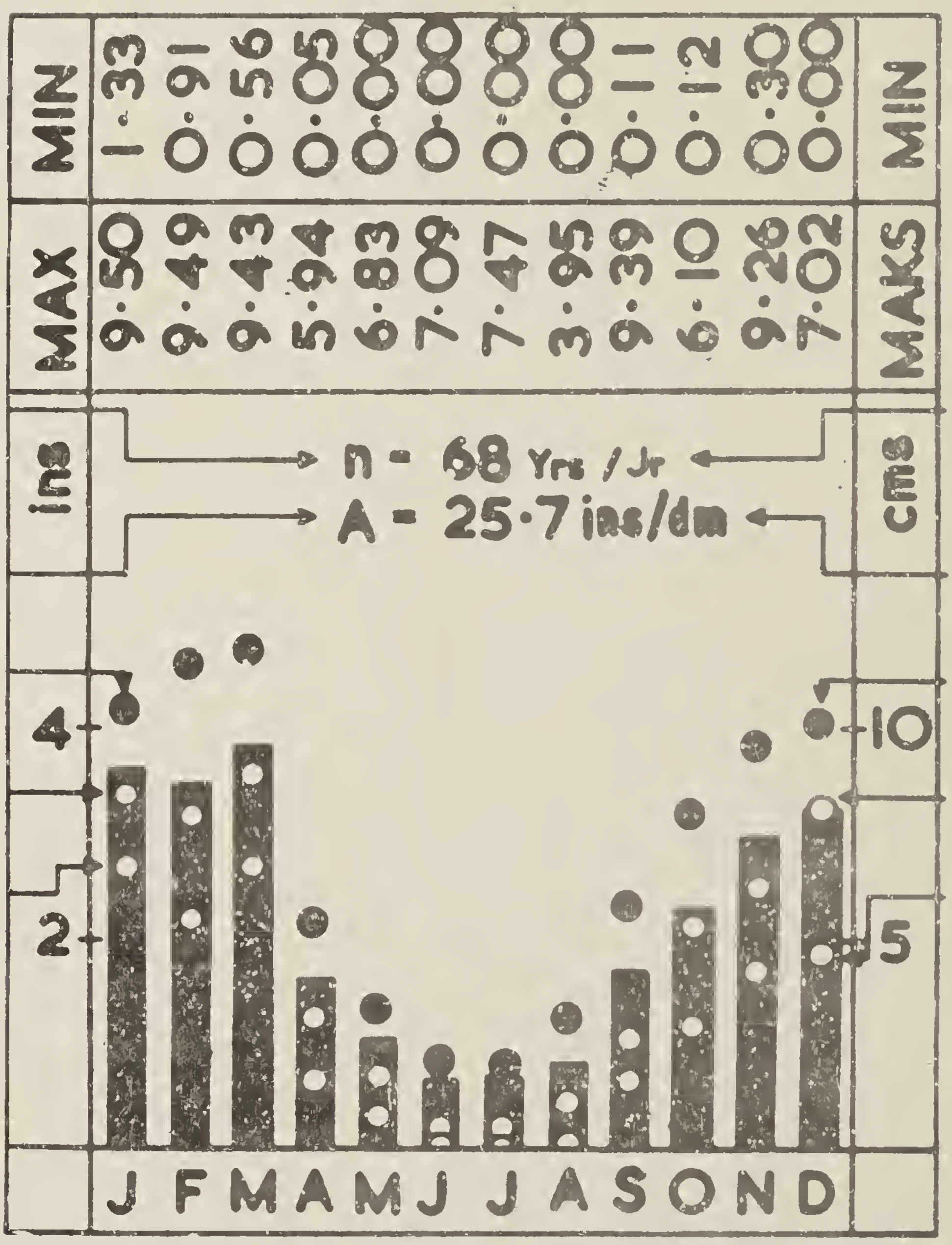
LOCALITY	HOST	FLEAS
Tsodilo Hills	Tatera leucogaster Mastomys natalensis	Xenopsylla hipponax Xenopsylla species
Seronga	Mastomys natalensis Tatera leucogaster Mastomys natalensis	Xenopsylla species Xenopsylla philoxera Xenopsylla species and Echidnophaga gallinacea
Sepopa	Tatera leucogaster	Xenopsylla philoxera and Xenopsylla species Xenopsylla philoxera
Zankuyo	Mastomys natalensis Tatera species Mastomys natalensis	Echidnophaga gallinacea Xenopsylla species Xenopsylla hipponax
Gomare	Tatera Leucogaster Mastomys natalensis	Xenopsylla philoxera and Xenopsylla species Xenopsylla philoxera and Xenopsylla species
Tsau	Tatera species	Xenopsylla philoxera Listropsylla dorippae Xenopsylla hipponax
Machaneng	Mastomys natalensis Tatera leucogaster	Xenopsylla species Xenopsylla philoxera and Xenopsylla hipponax
Kaiserspan	Phacochoerus aethiopicus	Echidnophaga larina
Kasane	Tatera species	Xenopsylla hipponax

continued/.........

LOCALITY	HOST	FLEAS
Mealie lands near Mokgodi Siding	Gerbil nest	Xenopsylla species
Mealie lands near Ramoutsa	Gerbil nest	Xenopsylla species & Listropsylla species
Tsetsebye	Tatera species burrow	Xenopsylla species
Tsetsebye	Mungos mungos (Meerkat)	Echidnophage gallinacea
Tsetsebye	Tatera burrow	Xenopsylla species
Machaneng	Burrow	Xenopsylla phyllomae
Bain's Drift	Burrow	Xenopsylla hipponax
Matatane	Burrow	Xenopsylla species

In all cases the biological test for the presence of Pasturella pestis yielded negative results.

REFERENCE



Lowest rainfall for a single month recorded during a period of n years.

Highest rainfall for a single month recorded during a period of n years.

Period of years on which these statistics are based.

Average annual rainfall over n years.

Upper Quartile.

Median.

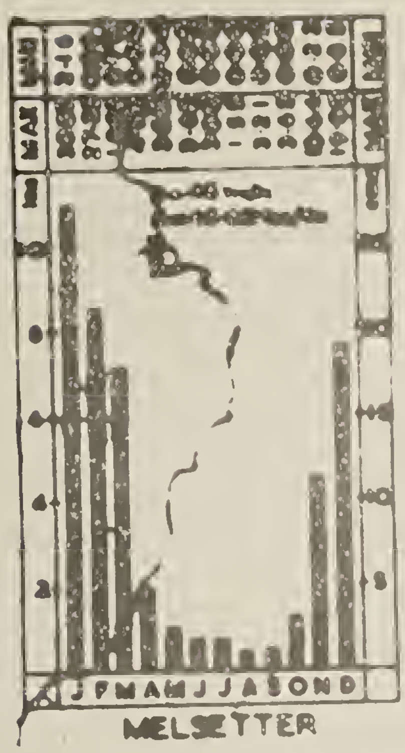
Lowest Quartile.

The top of the black column indicates the average rainfall for each month.

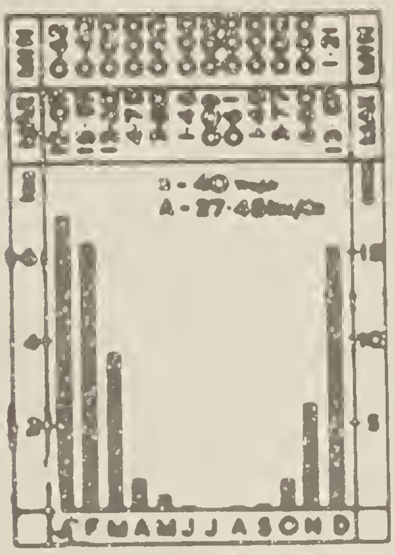
UMTATA

The monthly maximum and minimum amounts of rain are in the units (inches or cms.) of the original measurements as shown after the average annual rainfall (A).

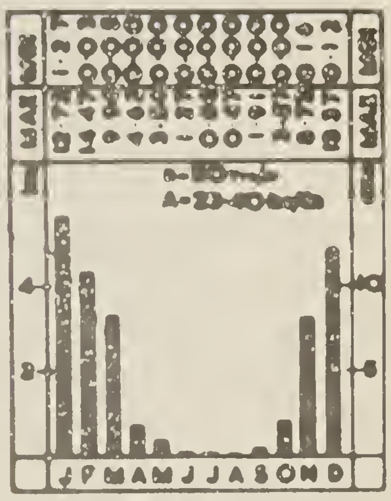
INFLUENCE OF CLIMATE
ON
BILHARZIA SNAIL HABITATS
in
BECHUANALAND



MELSETTER

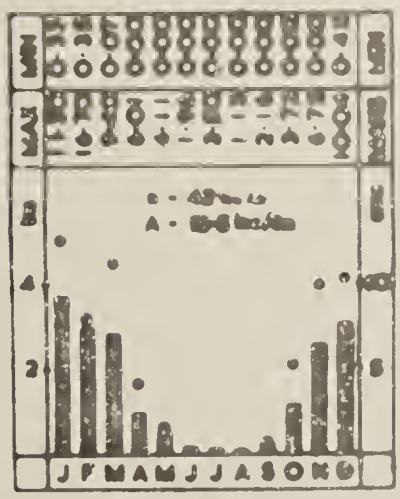


LIVINGSTONE

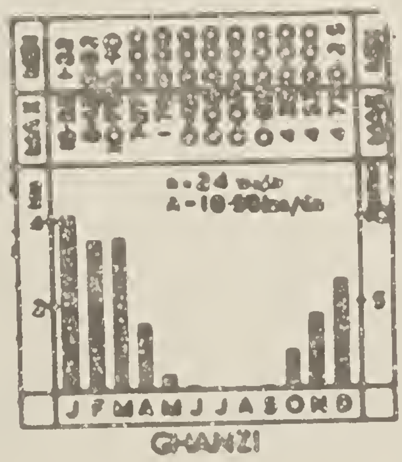


BULAWAYO

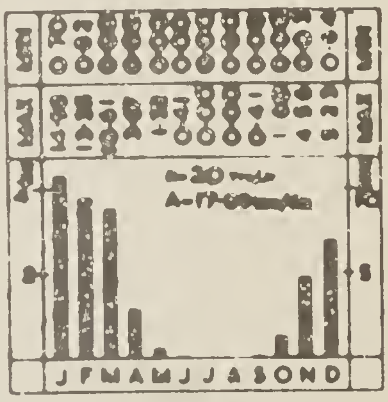
Warm, moist East coast winds are deflected along the coast by the Eastern mountain ranges where rainfall is high, as at Melsetter. Inland, the ground level falls to Livingstone and Bulawayo, which have a lower yearly rainfall.



MAHALAPYE

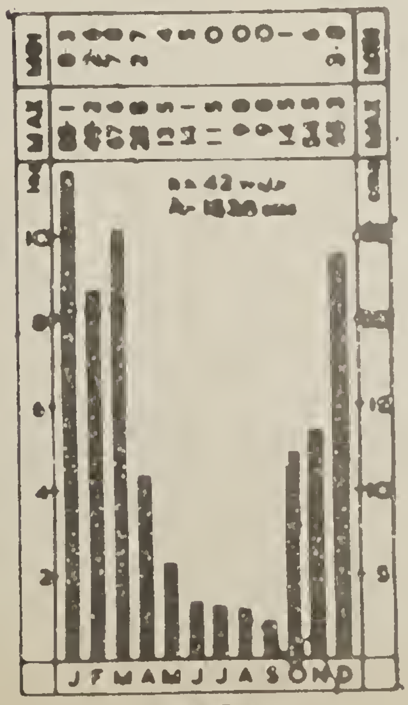


GHANZI

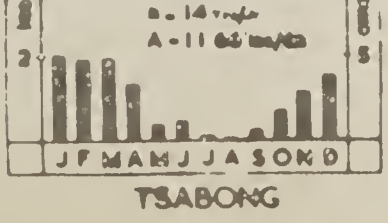


MAUN

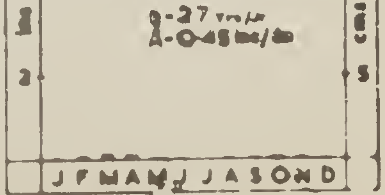
Bechuanaland receives still less rain. For seven months annually there is not enough precipitation in Bechuanaland to maintain pools and flowing streams. Dry river beds are flushed out by the thunder storms which supply the main source of the summer rainfall of November to March. The evaporation rate is high.



BEIRA



TSABONG



WALVISBAAI

These three graphs show the extreme differences between the East coast, the central plateau and the

APPENDIX "B"

BILHARZIA

TABLE I

CHILDREN'S URINE TESTED FOR BILHARZIA IN 1959 ON A ONE TEST BASIS

Locality	Map reading	% passing eggs	Number of searches
Panda-ma-Tenga	S.18.30 E.25.35	60%	2
Palapye	S.22.33 E.27.09		
(age 5-14 yr.)		66%	4
(age 15-18 yr.)		17%	4
Mochudi (Isang Senior School)	S.24.26 E.26.10	8%	5
(Molefi Hill School)		31%	5
Oodi	S.24.35 E.26.04	55%	1
Mogoditsane	S.24.37 E.25.49	4%	1
Gaberones	S.24.39 E.25.54	1%	1
Gabane	S.24.40 E.25.50	0%	1
Kopong	S.24.30 E.25.54	0%	1
Kumakwane (Kolobeng R.)	S.24.44 E.25.35	30%	1
Sequani	S.24.28 E.26.25	19%	1
Mathubudukwane	S.24.28 E.26.25 (approx)	36%	1
Forest Hill Mission, Khale	S.24.48 E.25.55	50%	1
Ramoutsa (Railway Station)	S.24.50 E.25.50	96%	1
Ramoutsa Village		83%	1

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APPENDIX "B"

TABLE II

LIST OF SNAILS FOUND IN THE BECHUANALAND PROTECTORATE

Identified by the World Health Organization Snail Identification Centre, Salisbury, or by the Zoological Department of Potchefstroom University, Union of South Africa

Snails	Habitats found in between the years 1956 and 1959
1. Bilharzia Carriers	
(a) S. haematobium	
Bulinus (Ph.) globosus	Tantabane Farm (Inchwe River), Maun, Panda-ma-Tenga, Palapye, Makalamabedi, Mochudi, Morwa, Lobatsi railway dam, Lobatsi stream, Notwani River, Serowe and near Bosoli.
Bulinus (Ph.) africanus	Palapye, Maun, Francistown, Mochudi, near Morwa, Lobatsi railway dam, Kolobeng stream, Metsimaswane stream, Morwa, Notwani River, pools in several places other than in Mochudi, Mogobane irrigation channels and dam.
(b) S.mansoni	
Biomphalaria pfeifferi	Maun (Thamalakani River) and the Shaski River near Maun, Sequani in Mariko River, Panda-ma-Tenga in the Matetse River tributaries. In the Limpopo River at Palla Ranch.
2. Not known to carry Bilharzia in this area but susceptible to Schistosome strains from other parts of Africa	
B. (B) tropicus alluaudi (Dautzenberg)	Palapye in Lotsani River pools in the village area.
B. (B) tropicus (Krauss ?)	Seruli Station dam, Serowe dam, Mabuana and Lerala pans on the Martins Drift road:, Molopo River near Bray and Mabuli and Werda, Lobatsi railway dam, Kolobeng stream, Metsimaswane stream by main road and pools near Morwa, Notwani River, at Mochudi and in pools north of the village. Kanye village dam, Bathoen's dam and vegetable irrigation channels. Mogobane dam and irrigation

channels/......

APPENDIX "B"

TABLE II (contd)

Snails	Habitats found in between the years 1956 and 1959
	channels. Several farm dams long the Ramathlabama-Lobatsi road and in the Ramathlabama stream by the railway bridge, Palapye, Lephephe, Nata River, Shashi River, Malan's Farm (Gaberones), Kumalwane, Francistown, Mahalapye, Ootsi Village, Gabane, Mogoditsane, Madibola River and dam, Notwani dam and Pitsani.
B. (B) tropicus coreus	Mogobane Dam.
B. (b) forskalii	Maun rivers, Francistown - Tati and Shashi Rivers, Mochudi Village in Notwani River, Tsessebe, Molopo River at Mabuli dam and Bray, Mosinki near Molepolole, Konawa dam between Lephephe and Mahalapye, Lobatsi railway dam, Palapye in river pools of the Lotsani River, Gabane, near Ghanzi on Ramsden's ranch, Boditse dam near Molepolole, Kutse, Mathethe, Lephephe, Boswelatlou in the Lobatsi area, Kudumetse, Mosinki, Werda and Mabuli and Bray in the Molopo. Lobatsi Kloof stream, Lerala pan on Martins Drift road, Sequani in the Mariko River pools, Serowe and Kumakwane.
B. (B) scalaris (Dunker)	Palapye in Lotsani River pools
3. Other snails found in the Bechuanaland Protectorate not known to carry human Bilharzia	
B. (B) reticulatus	Mochudi in pools near the Notwani River (not in the stream bed).
Lymnaea natalensis	Found too frequently to note all habitats. Found in most of the pans and dams in the African Reserves of the Bakwena, Bangwaketse, Bamangwato, Ngamiland, at Maun, and Makalamabedi in the Botletle stream.
Lanistes ovum	Panda-ma-Tenga, Shashi River (Maun).

Lanistes/..........

APPENDIX "B"

TABLE II (contd.)

Snails	Habitats found in between the years 1956 and 1959
Lanistes (species uncertain)	Maun River reticulations of the Thamalakani and Shashi streams, Makarikari pans, Nata River near Nata Camp and Makalamabedi.
Lanistes olivaceus	Maun.
Viviparus (species uncertain)	Maun area in Thamalakani and Shashi streams.
Anisus natalensis	Seruli Station dam, Ramathlabama stream by railway bridge, Palapye in Lotsani River pools, Kanye in irrigated gardens below Bathoen's dam, Kanye village dam, Maun from Thamalakani River.
Achatina zebra	Lephephe, Boatenwana village and Rametsane.
Achatina damarensis	Kang.
Xerocerastus damerensis	Kokojane dam in the Bakwena Reserve, Lephephe, Rametsane, Tsane, Lehututu.
Pila (species)	Maun

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APPENDIX "B"

TABLE III

LIST OF SNAIL HABITATS AND SNAILS FOUND THEREIN

Habitat	Map Reading	Snails
Boatenwana Village	S.23.39 E.25.55	Lymnaea natalensis Achatina zebra
Boditse Dam, near Molepolole	Approximately S.24.26 E.25.32	B. (B) forskalii
near Bosoli (Tati Concession) - roadside pool	S.21.00 E.22.35	B. (Ph.) globosus
Boswelatlou (near Lobatsi)	Approximately S.25.13 E.25.40	B. (B) forskalii
Bray (Molopo River)	S.25.30 E.23.40	B. (B) tropicus
Breetz Pan	S.23.46 E.23.20	Xerocerastus (shells)
Chukutsa Pan	S.21.17 E.25.01	Lymnaea natalensis
Dutlwe Village	S.23.58 E.23.50	Lymnaea natalensis
Francistown - Shashi River	S.21.13 E.27.30	B. (B) forskalii
Francistown - Tati River		B. (Ph.) africanus B. (B) forskalii B. (B) tropicus
Gabane	S.24.40 E.25.50	B. (B) tropicus B. (B) forskalii
Kane Pan	S.24.22 E.21.05	Lymnaea natalensis
Kang	S.23.38 E.22.45	Lymnaea natalensis Achatina damarensis
Kanye - Village Dam	S.24.59 E.25.21	B. (B) tropicus B. (B) forskalii
Bathoen's Dam		B. (B) tropicus
Pool in vegetable gardens below Bathoen's dam		Anisus natalensis
Kokojane Dam	S.24.08 E.25.11	Xerocerastus damarensis
Kolobeng Stream	S.24.40 E.25.40	B. (Ph.) africanus B. (B) tropicus
Kudumetse	S.23.24 E.27.04	B. (B) forskalii
Kumakwane	S.24.44 E.25.35	B. (B) tropicus B. (B) forskalii
Kutse (Kuke Pan)	S.23.17 E.24.30	B. (B) forskalii
Lehututu	S.23.55 E.21.50	Xerocerastus damarensis
Lekadiba (Molepolole)	Approximately S.24.26 E.25.32	Lymnaea natalensis

APPENDIX "B"

TABLE III (contd.)

Habitat	Map Reading	Snails
Lephephe Village	S.23.18 E.25.50	B. (B) tropicus Xerocerastus damarensis Achatine sp. Achatina zebra B. (B) forskalii Lymnaea natalensis
Lephephe at Kanawa Pan		B. (B) forskalii B. (B) tropicus
Lerala Pan (Martins Drift Road)	S.22.47 E.27.37	B. (B) tropicus
Limpopo Inn (Limpopo River)	S.22.50 E.23.02	Corbicula africana) not Unio Coffer)snails
Lobatsi Kloof Stream	S.25.13 E.25.40	B. (B) forskalii
Lobatsi Railway Dam		Bulinus (Ph.) globosus Bulinus (Ph.) africanus B. (B) tropicus B. (B) forskalii
Lobatsi Stream bed (dry) below dam		Achatina sp. (shell only)
Mabuana Pan (Martins Drift Road)	S.22.44 E.27.27	B. (B) tropicus
Mabuli Pan (Molopo River)	S.25.12 E.24.36	B. (B) tropicus B. (B) forskalii
Madibola River and Dam	Approximately S.21.11 E.24.35	B. (B) tropicus
Mahalapye, 10 miles west of	S.23.03 E.26.40	B. (B) tropicus B. (B) forskalii
Makalamabedi	S.20.20 E.23.50	(1958) B. (Ph.) globosus Lymnaea natalensis Lanistes sp.
Makarikari Pan and Pools	S.20.00 E.25.00	Lanistes sp.
Malan's Farm (Gaberones)	Approximately S.24.39 E.25.54	B. (B) tropicus
Mathethe	S.20.25 E.25.17	B. (B) forskalii
Maun	S.19.59 E.23.25	B. (Ph.) globosus B. (Ph.) africanus Biomphalaria pfeifferi Pila sp. B. (B) forskalii Lymnaea natalensis Lanistes sp. Lanistes olivaceus Viviparus sp.

APPENDIX "B"

TABLE III (contd.)

Habitat	Map Reading	Snails
Metsimaswane Stream	S.24.32 E.26.00	B. (Ph.) africanus B. (B) tropicus
Metsimotlhabe (Mochudi)	S.24.25 E.26.10	Lymnaea natalensis
Mochudi (Notwani River Pools)	S.24.26 E.26.10	B. (Ph.) africanus B. (B) forskalii B. (B) tropicus B. (B) reticulatus Corbicula africana (not a snail)
Mogobane Irrigation Scheme and Dam	S.24.55 E.26.45	B. (Ph.) globosus B. (B) tropicus corneus B. (Ph.) africanus.
Mogoditsane Village	S.24.37 E.25.49	B. (B) tropicus
Mogoditsane Stream		Achatina sp.
Mokobopetsane Stream (Molepolole)	Approximately S.24.26 E.25.32	Lymnaea natalensis
Molepolole, in the Ditshegane Stream	S.24.26 E.25.32	Lymnaea natalensis
Molepolole, in the Molepolole stream		Lymnaea natalensis
Molepolole, in the Tshwangane Stream		Lymnaea natalensis B. (B) forskalii
Morwa - Pool near Village	S.24.25 E.26.05	B. (Ph.) globosus B. (Ph.) africanus B. (B) tropicus
Mosinki, near Molepolole	Approximately S.24.26 E.25.32	B. (B) forskalii
Nata River	S.20.05 E.26.05	B. (B) tropicus Lanistes sp.
Notwani New Dam	S.24.45 E.25.52	B. (B) tropicus B. (Ph.) globosus
Notwani River		B. (Ph.) globosus B. (Ph.) africanus B. (B) tropicus
Ootso Village Dam and Stream	S.25.00 E.25.42	B. (B) tropicus
Palapye	S.22.33 E.27.09	B. (Ph.) globosus B. (Ph.) africanus B. (B) tropocus alluaudi B. (B) scalaris Anisus natalensis

APPENDIX "B"

TABLE III (contd.)

Habitat	Map Reading	Snails
Palla Ranch (Limpopo River)	S.23.45 E.26.58	Biomphalaria pfeifferi
Panda-ma-Tenga	S.18.30 E.25.35	B. (Ph.) globosus Lumnaea natalensis Biomphalaria pfeifferi Lanistes ovum
Pitsani Station ½ mile east of - a dam	S.25.29 E.25.36	B. (B) tropicus
Pitsani-Molopo	S.25.50 E.25.04	B. (B) forskalii
Raleope (Molepolole), along river	Approximately S.24.26 E.25.32	Lymnaea natalensis
Ramathlabama Stream at main road	S.25.38 E.25.35	Anisus natalensis B. (B) tropicus
Ramathlabama/ Lobatsi road-		
A small dam at 20 miles	S.25.20 E.25.40	B. (B) tropicus
A farm dam at 32 miles	S.25.14 E.25.39	B. (B) tropicus
Rametsane	S.23.27 E.25.50	Achatina Zebra Xerocerastus damarensis
Ramoutsa (Notwani River)	S.24.50 E.25.50	Ostraeoda crustaceae (not a snail)
Ramsden's Ranch near Ghanzi	Approximately S.21. 32 E.21.47	B.(B) forskalii
Sequani (Mariko River)	S.24.28 E.26.25	Biomphalaria pfeifferi B. (B) forskalii
Serowe Dam	S.22.33 E.26.43	B. (B) tropicus B. (Ph.) globosus B. (B) forskalii
Seruli Station Dam	S.21.57 E.27.13	Anisus natalensis B. (B) tropicus
Shashi River at Maun and Motjaponeng Bridge on Maun River	S.19.59 E.23.25	B. (ph.) globosus B. (Ph.) africanus Biomphalaria pfeifferi B. (B) tropicus B. (B) forskalii Lymnaea natalensis Lanistes ovum Lanistes sp. Viviparus sp. Anisus natalensis

TABLE III (contd)

Habitat	Map Reading		Snails
Tantabane Farm (Tati Concession) Inchwe River	S.20.55	E.27.33	B. (Ph.) globosus
Thamaga	S.24.40	E.25.34	Lymnaea natalensis
Tsane	S.24.05	E.21.55	Xerocerastus damarensis
Tsessebe	S.20.46	E.27.35	B. (B) forskalii
Tshwane River	S.22.24	E.22.04	Lymnaea natalensis
Werda (Molopo River)	S.25.15	E.23.17	B. (B) tropicus B. (B) forskalii

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APPENDIX "B"

TABLE IV

Map readings for the places mentioned in the following table :-

Bosole Siding	S.21.00	E.22.35
Derdepoort	S.24.28	E.26.25
Gweta	S.20.12	E.25.15
Kasane	S.17.49	E.25.09
Kumakwane	S.24.44	E.25.35
Lobatsi	S.25.13	E.25.40
Makalamabedi	S.20.20	E.23.50
Maun	S.19.59	E.23.25
Metsemaswane road bridge	S.24.46	E.26.46
Mochudi	S.24.26	E.26.10
Mogobane	S.24.55	E.26.45
Mookane	S.23.22	E.26.17
Palapye	S.22.33	E.27.09
Palla Ranch	S.23.45	E.26.58
Panda-ma-Tenga	S.18.30	E.25.35
Rakops	S.21.23	E.24.24
Ramoutsa	S.24.50	E.25.50
Sequani	S.24.28	E.26.25
Tantabane Farm	S.20.54	E.27.33
Totome	S.20.15	E.27.01

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TABLE IV

Habitats of Carrier Snails listed separately as found to date for S. haematobium and for S. mansoni with estimates of population and risk to each. Infection rates found during field survey from Hospital reports are shown with distances and relative facilities for diagnosing and treating cases.

Carrier Habitat	Field Survey Findings		Station in Medical Charge of the Area				Nearest Dispensary for Bilharzia Control of the infected area.		Administrative District of	
	Population at risk in the Bechuanaland Protectorate ⌿	Children passing eggs % of test group	Hospital and Grade of facilities for Bilharzia	Distance from Habitat in miles	Cases of Bilharzia reported in 1959					
					From Habitat	From all Sources	Place, name and Grade	Dist. in miles from Habitat	Habitat	Hospital
					Schistosoma haematobium				Northern Division	
Maun Rivers	8,000	Nil	(A) Maun	1-10	Nil	Nil	-	-	Ngamiland	Ngamiland
Matetse River	450	70%	(A) Maun	200	2	4	(G) Pand-ma-Tenga (F) Kasane x	0-5) 60-70)	Ngami/Chobe boundary	Ngamiland
Makalamabedi	1,500	not tested	(A) Maun	40	Nil	4	(F) Rakops	70-75	Chobe	Ngamiland
Gweta	1,700	" "	(A) Maun	120	Nil	4	(F) Rakops	80	Chobe	Ngamiland
Inchwe River	50	" "	(A) Francistown	25-30	Nil	6	(G) Totome	30-35	Francistown	Francistown
Bosole Siding	100	" "	(A) Francistown	20-25	Nil	6	-	-	Francistown	Francistown
Lotsani River	3,000	" "	(A) Serowe	45	101+	119	(D) Palapye	1- 2	Serowe	Serowe
Crocodile River	1,000	" "	(C) Mahalapye	55	3	3	(K) Kookane	15	Machaneng	Machaneng
									Southern Division	
Notwane River	12,000	31%	(B) Mochudi	2	) 56	56 (	-	-	Mochudi	Mochudi
Metsemtlhabe Stream	1,800	not tested	(B) Mochudi	5	)	(	-	-	Mochudi	Mochudi
Notwane River	200	" "	(C) Gaberones	10-12	Nil	35	(E) Ramoutsa ∅	6- 8	Gaberones	Gaberones
Mariko River	1,500	" "	(B) Mochudi	20-25	Nil	56	(B) Derdepoort	2- 5	Mochudi	Mochudi
Kolobeng Stream	1,000	8%	(C) Gaberones	20	Nil	35	(K) Kumakwane	4- 5	Gaberones	Gaberones
Metsemaswane Stream	1,500	not tested	(C) Gaberones	12-15	Nil	35	(E) Ramoutsa	7-10	Gaberones	Gaberones
Mogobane Irrigation	2,000	20%	(A) Lobatsi	16-18	Nil	Nil	(E) Ramoutsa	12-15	Lobatsi	Lobatsi
Lobatsi Stream	1,000	not tested	(A) Lobatsi	3-10	Nil	Nil	-	-	Lobatsi	Lobatsi
Lobatsi Dam	1,500	not tested	(A) Lobatsi	3	Nil	Nil	-	-	Lobatsi	Lobatsi
	38,300									
					Schistosoma mansoni					
Maun Rivers	8,000	nil	(A) Maun	1-10	Nil	Nil	((G) -	-	Ngamiland	Ngamiland
Matetse River	450	not tested	(A) Maun	200	Nil	Nil	((G) Panda-ma-Tenga ((F) Kasane x	0- 5) 60-70)	Ngami/Chobe boundary	Ngamiland
Crocodile River	1,000	not tested	(C) Mahalapye	55	Nil	Nil	(D) Palapye ∅	15	Machaneng	Serowe
Mariko River	1,500	" "	(B) Mochudi	20-25	Nil	Nil	(B) Derdepoort ∅	4- 5	Mochudi	Mochudi
	10.950									

⌿ Population estimated to be living at risk of infection from each habitat of the carrier snail as found to date.
+ Reported from Palapye Dispensary.
∅ Derdepoort Mission (D.R.C.) Hospital in the Transvaal.
x The nearest in-patient Hospital is Livingstone in Northern Rhodesia (50-60 miles).

The following list indicates the available medical facilities. Each estimate is based on the staff establishment with or without in-patient beds :-

(A) 2 Medical Officers, White Sisters, Wards, African Assistants
(B) 1 Medical Officer, one or more White Sisters, Wards, African Staff
(C) 1 Medical Officer, no White Sister, Wards, African Staff
(D) 1 Medical Officer, 1 Dispenser, no beds
(E) to (M) are classed as dispensary units as follows :-
(E) Trained Mission Sister with some beds, visited at short intervals by a Medical Officer
(F) A Dispenser and Staff Nurse and some beds
(G) Dispenser alone
(H) Staff Nurse visited by a Medical Officer weekly or fortnightly
(I) Staff Nurse visited by a Medical Officer monthly or less often
(K) No resident. Medical Officer visits a reserved building once weekly or fortnightly
(L) No resident. Medical Officer visits a reserved building once monthly or less often
(M) No resident. No reserved building. Medical Officer visits quarterly or less often.

APPENDIX "B"

PREAMBLE TO TABLE V

The distribution of Bilharzia in the Bechuanaland Protectorate may not appear to be reflected by any notable variation in the morbidity tables of hospital groups situated near or far from the centres of known Bilharzia risks, but Table V does indicate significant differences which may be related to lax sanitation in the areas of denser population. The table includes the percentage totals of diseases cited in the World Health Organization questionnaire on Bilharzia (Reference MHO/PA/26.59).

Area Group 1 of Table V records the combined disease returns from Palapye and Serowe Government hospitals which have medical care over a mid-eastern area containing known sources of human Bilharzia. It lies north of the Tropic of Capricorn.

Area Group 2 records Lobatsi and Gaberones morbidity of an area south-east of the territory containing other sources of Bilharzia. It lies south of the Tropic of Capricorn.

Area Group 3 covers territory of mixed dry land and swamps. In the Okovango swamps and the Botletle River carrier snails are plentiful but cases have not been found near Maun. It lies north of the Tropic of Captricorn.

Area Group 4 is semidesert with few or no suitable water sources and no known local infection rate. Neither *Biomphalaria pfeifferi* nor *Bulinus (Physopsis)* species have been recorded from this area. It lies north of the Tropic of Capricorn.

Numbers in the left-hand column refer to the International Intermediate list of 150 causes of disease.

The percentages calculated in Table V show the proportion of all cases recorded which were due to the particular cause shown on the left of the table. Areas 1 and 2 are in the zone of most frequent transport and travel. Population density in them averages 25 to the square mile but is irregularly grouped and is subject to seasonal movements by the major proportion of the people. Part of the year is spent by most of the people at their cattle holdings on pastoral lands and at their agricultural holdings in crop bearing areas. The latter are often separate from the pastures. The crop bearing areas depend on rainfall. Five to seven months annually record nil rain or too little to maintain ponds. During part of this season, after gathering crops, the people move into a series of central villages. Arrival of spring rains signals their redispersal to their crop farms.

This movement is rather more pronounced in the tribal reserves than in the Lobatsi district because the latter contains numerous farms of white settlers. The Limpopo and Crocodile Rivers contain possible sources of Bilharzia which are screened off from the bulk of the Africans in the Bamangwato Reserve by a deep belt of cattle ranches in white ownership. On those ranches are very few cattle

drovers/....

drovers. Some of the Tuli Block ranches are vacant lands used by absentee owners as shooting boxes. **Movement** within the Tuli Block farms area is minimal, being restricted by extremely low population density. A somewhat similar state exists in the southern parts of the Tati Concession.

At present the Bilharzia snail habitats in the Tuli Block area on the Bechuanaland Protectorate side of the Crocodile and Limpopo Rivers are not intense sources of the disease. Owing to a growing tendency to irrigate the alluvial soils of the river banks along the eastern side of these farms more labour and more snail sites may become infected along the Tuli Block's eastern border on those irrigable lands. The Limpopo and Crocodile Rivers contain flowing water throughout the year. The stream lines draining eastwards are mostly dry except for short periods, often only of hours, after heavy rains. They lie as sandy, dry surfaced river beds most of the year and are subject to violent flushing by flood waters from the sun-baked lands when thunder storms initiate the beginning of rainy seasons. Snail habitats in them are scarce with few exceptions, some of which are pools along the Notwani and its tributaries and parts of the Lotsani. Springs of fresh water are scarce. They are widely separated over great areas of dry land. They sink away into the sandy stream beds soon after emerging. Some of these give the dry weather water supplies to the large dry season dormitory villages which stand so often within the three-thousand foot contours on the west of the railway line. Many of the springs are associated with hills. Borehole pumped water increasingly augments the supplies within those growing villages without providing additional snail habitats. Where new dams have been constructed along river beds, very considerable increases of Bulinus habitats have been created, including those of Bulinus (Physopsis), globosus and africanus. New dams on river lines are dangerous. The origin of snails at new dams may be many miles away in the small swampy spring areas of the streams' headwater sourses. Thunderstorm floods wash some down stream to lodge in natural sites or those new ones of man's device. Recent fencing and other efforts to separate the people from the new dam sites have failed. Where a dam is constructed now on tribal ground the people tend to flood in, to build new huts as close as possible to the new water supply. Lobatsi Railway dam on the railway reserve and numerous white-owned farm dams usually are sufficiently isolated by trespass customs to prevent continuous or heavy infection when they contain Physopsis species. Within some larger African reserve villages, the Chief's influence and local customs reduce human contact with the dam lakes in the village area. These lakes are mainly reserved for cattle. Physopsis species have not been found frequently in those older dam pools or lakes in the larger villages of Chief's headquarters. Those villages use spring water and pump from boreholes for domestic human supplies.

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TABLE V

Inter- mediate List Number	Disease	Area							
		1		2		3		4	
		Cases Recorded	% of Total all Diseases	Cases Recorded	% of Total all Diseases	Cases Recorded	% of Total all Diseases	Cases Recorded	% of Total all Diseases
A.38	Schistosomiasis	119	.37	39	.1	4	.05	-	-
A.47	Malignant neoplasm of intestine, except rectum	2	.006	2	.005	1	.004	-	-
A.48	Malignant neoplasm of rectum	-	-	-	-	-	-	-	-
A.57	Malignant neoplasm of all other and unspecified sites	5	.016	6	.016	23	.08	1	.026
A.60	Benign neoplasm of unspecified nature	116	.37	56	.14	74	.3	10	.26
A.83	Hypertension with Heart disease	23	.07	26	.06	2	.008	-	-
A.84	Hypertension without mention of heart	20	.06	8	.02	14	.055	8	.21
A.102	Appendicitis	13	.04	24	.06	15	.06	-	-
A.104	Gastro-enteritis and colitis, except diarrhoea of the new-born	1,272	4.	3,138	8.	1,762	7.	188	5.
A.105	Cirrhosis of the liver	9	.03	18	.05	1	.004	-	-
A.108	Acute nephritis	25	.07	30	.07	2	.008	-	-
A.109	Chronic, other and unspecified nephritis	2	.006	1	.002	2	.008	-	-
A.110	Infections of the kidney	510	1.6	32	.08	20	.08	-	-
A.111	Calculi of the urinary system	-	-	4	.01	-	-	-	-
A.114	Other diseases of genito-urinary system	826	2.6	1,396	3.6	683	2.7	52	1.4

APPENDIX "C"

NUMBER OF SMALLPOX VACCINATIONS CARRIED OUT DURING 1959

At hospitals and dispensaries :-

Ghanzi	6,500	
Maun	15,603	
Palapye	510	
Sefhope	345	
Mahalapye	11,906	34,864

(In respect of Maun and Mahalapye these figures include the majority of vaccinations done by the Health Staff in their areas).

By the Field Officer stationed at Gaberones:-

Gabane Village	740	
Khumakwane	840	
Thamaga	6,700	
Mankgodi	1,500	
Mochudi	8,400	
Manyana	800	
Ootsi	342	
Mogobane	800	
Mabudukwane	1,404	
Sikwane	834	
Molowana	540	
Oodi	940	
Mabalana	460	24,300

By the Health Inspector, Lobatsi :-

Tshabong	150	
Lobatsi	1,249	
Kanye	7.372	
Ranaka	481	
Molepolole	2,016	
Ootsi	418	
Good Hope	191	
Pitsani Molopo	357	
Sedibeng	162	
Werda	243	
Makopong	525	
Eerste Rus	152	13,316

By the Dispenser

Malete	350	350

By the Health Inspector at Francistown :-

Tonota	214	
Ramaquabane	408	
Nata	44	
Francistown	3,948	4,614
	TOTAL:	77,444

A large proportion of these were performed using imported freeze dried smallpox vaccine from England.

APPENDIX "D"

MALARIA

TABLE I

Figures extracted from Nosological Returns for 1959 :-

Francistown Hospital	126
Gaberones Health Centre	-
Ghanzi Health Centre	50
Kanye Medical Mission Hospital	9
Kanye Moffat Hospital	-
Khale Dispensary	-
Lobatsi Hospital	6
Madinare Dispensary	5
Mahalapye Health Centre	21
Maun Hospital	3,129
Mochudi Hospital	-
Molepolole Hospital	6
Palapye Dispensary and Clinics	12
Ramoutsa, Hermannsburg Dispensary	-
Ramoutsa, St. Konrad's Dispensary	-
Sefhope Dispensary	1
Serowe Hospital	26
Tonota Dispensary	-
Tshabong Dispensary	-
	3,391

A further nine cases of malaria were seen in Mafeking Medical Headquarter's dispensary of persons thought to have been infected in Bechuanaland.

The Moffat Hospital, Kanye, closed during 1959 and its cases were dealt with thereafter by the Seventh Day Adventist Medical Mission Hospital.

These figures are redistributed at Appendix "D" Tables II and III in an attempt to indicate the distribution and incidence of this disease within the Bechuanaland Protectorate.

APPENDIX "D"

TABLE 11

Resolving Cases into Districts so far as records permit

District Name	District Approx. area sq. miles	Population in District (approx)	District Medical Unit	Number of Malaria Cases Reported By Medical Units	Number of Malaria Cases Reported District Total
			NORTHERN DIVISION		
Chobe	23,130	5,149	Kasane	307	307 +
Ngamiland	34,275	41,842	(Maun	1,703)	2,591
			(Shakawe	605)	
			(Tsau	147)	
			(Nokaneng	136)	
Ghanzi	44,550	5,050	(Ghanzi	50)	50
			(Kalkfontein	0-	
Francistown	2,075	17,530	Francistown	126	126
Serowe	45,000	101,490	(Rakops	231)	296
			(Serowe	26)	
			(Palapye	12)	
			(Madinare	5)	
			(Tonota	0)	
			(Totome	0)	
			(Sephephe	1)	
			(Mahalapye	21)	
Tuli	1,930	Migrant labour)	None	-	- †

+ Cases seen on tour by the Medical Officer are included in Maun hospital.

† The Northern Transvaal Health Department maintains malaria control in the Tuli Block, on payment from B.P. funds.

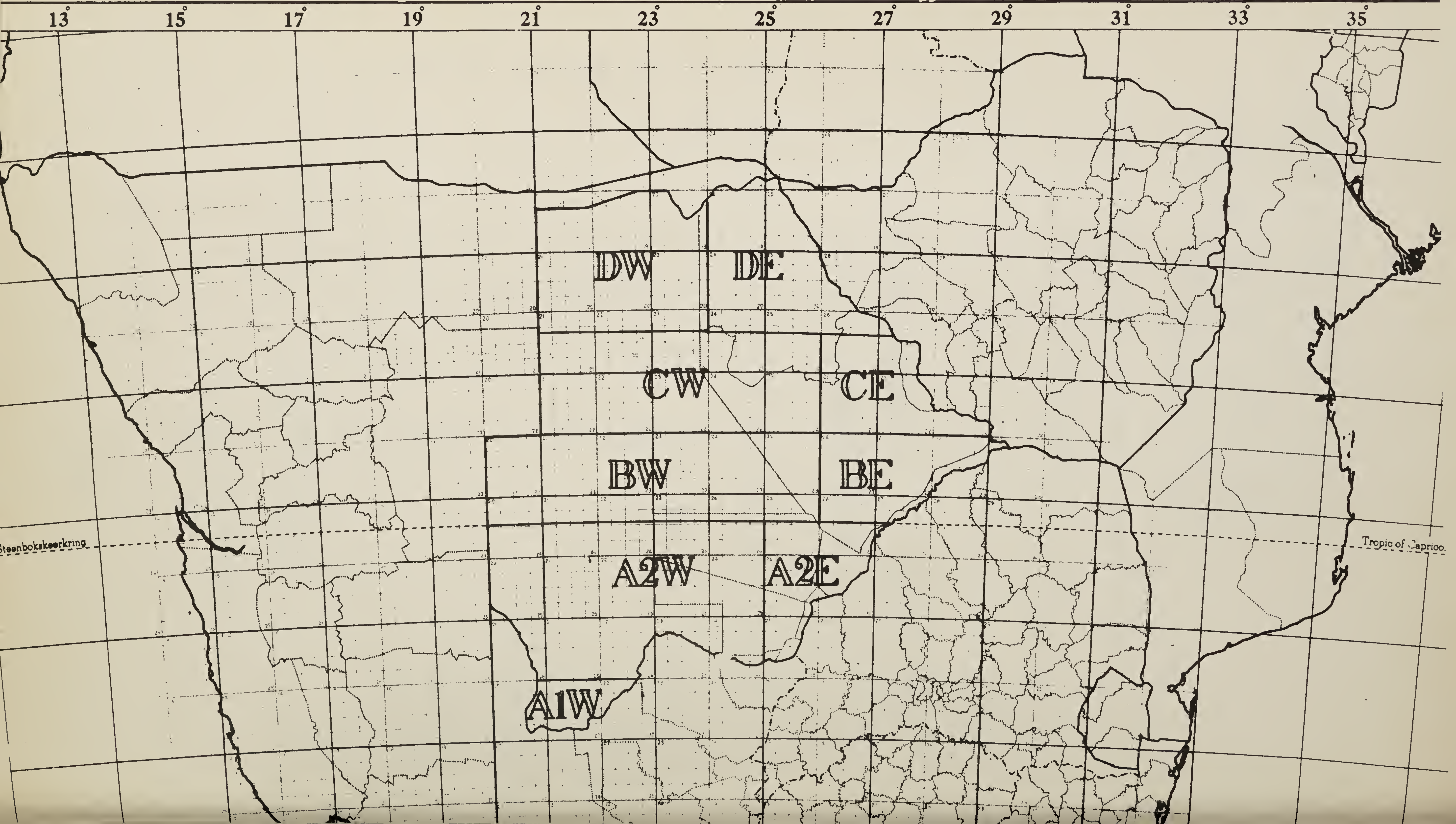
TABLE 11

-2-

District		Population in District	District Medical Unit	Number of Malaria Cases Reported	
Name	Approx area sq. miles	(approx)		By Medical Units	District Total
			SOUTHERN DIVISION		
Mochudi	2,900	not known	Mochudi	0	0
Molepolole	15,400	38,195	Molepolole	6	6
Gaberones	560	12,323	Gaberones Khale Ramoutsa	0 0 0	0
Kanye	9,350	36,884	Kanye	9	9
Lobatsi	700	not known	Lobatsi	6	6
Tshabong	42,130	6,868	Tshabong	0	0
			Tsane ∅		

∅ Molepolole Mission Hospital staff visits some villages of the Kgalagadi District and Kanye Medical Mission staff visits other Kgalagadi places. Tsane returns are thought to be nil for 1959 for Malaria but the morbidity for that Mission Dispensary are included with Kanye returns.

SUID-AFRIKA SOUTH AFRICA



APPENDIX "D"

TABLE IIA

Splenomegaly by Age

School or Place	Numbers of Children in age groups tested 0-1	1-4	5-10	11-15	Spleen class 0	1	2	3	4	5	
Rachele, Kanye			16	34	50						Aug.1959
Lekonono "			28	25	53						
Kanye General	1	2	16		18		1				
Gaberones School (Batlokwa Natl.)			51		51						October, 1959
Mochudi - Molefe School			50		50						
Khama, Serowe			50		49		1				
Palapye			50		50						
Francistown			50		50						
Tsessebe	1	2	23		25	1					
Jackalas I			16		16						
Panda-ma-Tenga		10	36	14	47	6	5	2			
Mahalapye			48	2	50						

Note: The figures underlined in the age group columns are the source of the enlarged spleens shown in the Hackett class groups.

Splenomegaly according to age groups
Panda-ma-Tenga

Age Years	Number Examined	Spleen Class 0	1	2	3	4	5
0-1	-	-	-	-	-	-	-
1-4	10	9	-	1	-	-	-
5-10	36	25	5	4	2	-	-
11-15	14	13	1	-	-	-	-
15 & over	-	-	-	-	-	-	-
	60	47	6	5	2	-	-

The splenomensure classes are after Hackett and Russell, as follows:-

Class 0	-	Normal, nonpalpable.
" 1	-	Palpable on deep inspiration only.
" 2	-	Palpable on normal inspiration, not projecting more than half way from the costal margin to a horizontal line through the umbilicus.
" 3	-	Projecting to the level of the umbilicus.
" 4	-	Projecting half way from the umbilicus to a line through the symphysis pubis.
" 5	-	Projecting lower than those in group 4.

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APPENDIX "D"

Explanation of the Tables included in Appendix "D" with reference to the Degree Square Map

Areas A to D with their east and west sub-divisions aim at improving the presentation of available information by collecting certain factors together which possibly influence the meaning of the numbers of malaria cases seen at individual hospitals, such as those listed at Table I, and the district survey of spleen rates at Table IIA. The vertical sub-division lines along parts of longitudes 25°00 and 26°00 east on the map serve as easily identifiable map readings. They lie near enough to the watersheds to differentiate the easterly flowing tributaries of the Limpopo system in an area of moderate population density and fast running drainage, from the Kalahari semi-desert, of no stream outlets, of almost no rivers and of minimal population. The vertical line at 24°00 east divides Ngamiland from the Chobe district by means of a map reading more easily located than is the actual boundary of Ngamiland. The relatively wet and dry areas within section D are the reverse of those in sections A, B and C. The Chobe district north of latitude 20°25 south is the drier of these two except where the Chobe River runs at the northern boundary.

In the south and central areas, nosological returns of treatment centres occasionally overlap by including district dispensaries with central returns. Their territorial spheres of action also intertwine, especially in the region of this map marked A2.E.

A clearer impression of the situation appears after grouping hospital returns, and that is the second aim of the divisions drawn on the map. Treatment centres situated in populous villages with many persons within a mile or two of the out-patient department may be expected to see more people suffering from acute febrile conditions of abrupt onset than other medical institutions in a more widely scattered population.

The number of skilled diagnosticians and the quality of their facilities for work may be expected also to influence results. Results require correlation with the hospital output in terms of patients treated. Table III (Hospital Patients) and Table IV (District Survey Team Blood Slide Results), together with Table V (Spleen Rates taken from the Medical Officer of Health's notes), regroup part of the 1959 malaria investigations to correlate the field work with the nosological returns of malaria from hospital groups.

The number of points reported upon in the field investigation section is far too small and the number and quality of the staff available was unsatisfactory and it was poorly trained. Moreover, these records show part of an effort interspersed between multiple duties of other diverse functions.

Maun Hospital was able microscopically to confirm most of the malaria cases of its own returns and of some of its district dispensaries, whereas southern stations had to rely more on remote confirmation from Johannesburg and so confirmed a smaller proportion.

The tables/......

The tables show that the southern and central areas in 1959 probably were free of malaria and that most of the cases seen in hospitals were unlikely to have acquired their infection locally.

The Limpopo and Molopo did not contribute significantly to the malaria infection rate of the Protectorate adjoining them.

The northern swamps and rivers on both east and west in Area D of the map contained the source of Bechuanaland's malaria infection in 1959.

The child population appears to be without the stimulus needed to acquire resistance to malaria except in the area D on the map.

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APPENDIX "D"

TABLE III

Latitude	Place	E. or W. of 25° E.	African Population near Medical Unit	Rank of Officer in Charge	Malaria Cases Recorded				Malaria cases as a % of Territorial Population
					By Unit	By Group	as a % of all diseases seen By Unit	as a % of all diseases seen By Group	
South of Capricorn									
26°00 S. 27°00 S. (A.1)	Tshabong	W	2,250	Dispenser	-	-	-	-	-
23°30 S. 26°00 S. (A.2)	Lobatsi	E		2 M.O's	6)	21	0.05)	0.024	0.007
	Molepolole	E	20,500	2 M.O.s	6)		0.04)		
	Kanye (1)	E)	30,000	1 M.O.	-)		-)		
	Kanye (2)	E)		2 M.O.s	9)		0.08)		
	Gaberones	E	15,000	1 M.O.	-)		-)		
	Mochudi	E	13,532	1.M.O.	-)		-)		
	Ramoutsa (1)	E)	10,000	Sisters	-)		-)		
	Ramoutsa (2)	E)		Sisters	-)		-)		
	Khale	E	Under 1,000	Sisters	-)		-)		

Kanye (1)	Moffat Hospital
Kanye (2)	Kanye Medical Mission Hospital
Ramoutsa (1)	Hermannsburg Dispensary
Ramoutsa (2)	St. Konrad's Dispensary

APPENDIX "D"

TABLE III
-2-

Latitude	Place	E. or W. of 25° E.	African Population near Medi-ical Unit	Rank of Officer in Charge	Malaria Cases Recorded				Malaria cases as a % of Territorial Population
					By Unit	By Group	as a % of all diseases seen By Unit	as a % of all diseases seen By Group	
North of Capricorn									
23°30 S.	Mahalapye	E	2,453	1 M.O.	21)	60	0.07)	0.086	0.02
22°00 S.	Palapye	E	2,500	1 M.O.	12)		0.11)		
(B)	Serowe	E	30,000	2 M.O.s	26)		0.15)		
	Sephophe	E	1,500	Dispenser	1)		0.008)		
22°00 S.	Francistown	E	2,872	2 M.O.s	126)	131	0.62)	0.476	0.043
20°25 S.	Madinare	E	3,700	1 M.O.	5)		0.08)		
(C)	Tonota	E	6,500	Dispenser	0)		-)		
	Totome	E	Under 1,000	Dispenser	0)		-)		
	Ghanzi	W	280	1 M.O.	50)	281	Not available)	3.801	0.094
	Kalkfontein	W	2,100	Dispenser	0)				
	Rakops	W	3,300	Dispenser	231)				
		E. or W. of 24° E							
20°25 S.	Maun	W	8,000	2 M.O.s	1,703)	2,591	Not available)	15,061	0.863
North	Shakawe	W	7,000	Dispenser	605)				
Boundary	Nokaneng	W	2,800	Dispenser	136)				
(D)	Tsau	W	5,000	Dispenser	147)				
	Kasane	E	200	Dispenser	307	307		14,626	0.102

APPENDIX "D"

TABLE IV

SLIDES TAKEN DURING 1959

DRY SEASON - 1st May - 30th November
MALARIA SEASON - 1st December - 30th April

A - Slides examined
B - Number positive

PLACE NAME	MAP REF.	DRY SEASON		MALARIA SEASON	
		A	B	A	B
Bobonong	C.E.	200	0	-	-
Serowe	B.E.	62	0		
Chadile	B.E.	56	0		
Mokobeng	B.E.	100	0		
Sefhope	B.E.	176	0		
Tsesjwe	B.E.			100	0
Matatane	B.E.	109	0		
Loensa la Moridi	B.E.			32	0
Voortrekker Schl.	B.E.			16	0
Sephare	B.E.			100	1
Ditshowane	B.E.	73	0		
Letoreng	B.E.	41	1		
Machaneng	B.E.			51	0
Makwath & Ramaboo	B.E.			30	0
Kudumetse	B.E.	87	0		
Mookane	B.E.	180	0		
Mahalapye	B.E.	57	0		
Shoshong Clinic	B.E.	10	0		
		951	1	329	1
	-	0.105%		0.304%	

Total number of slides examined during year ...1,280

Total positive. 2

- 0.156%

PLACE NAME	MAP REF.	DRY SEASON		MALARIA SEASON	
		A	B	A	B
Mogothwane	A2.E	26	0		
Palla Ranch	A2.E	14	0		
Gaberones	A2.E	50	0		
Khale	A2.E	30	0		
Mokgosi	A2.E	3	0		
Ramoutsa	A2.E	80	0		
Tsokwane	A2.E	17	0		
Olifants Drift	A2.E			50	1
Maramoksakap	A2.E			2	0
Madubudukwane	A2.E			40	0
Malolwane	A2.E			56	0
Sikwane School	A2.E			50	0
Mabalane	A2.E			45	0
Odi School, (Mochudi Distr.)	A2.E	50	0		
OOtsi	A2.E	50	0		
Kanye	A2.E	147	0		
B.S.A.Co.Ranch	A2.E	50	0		
		517	0	243	1
	-			0.411%	

Total number of slides examined during year... 760

Total positive. 1

- 0.131%

Note: 100 blood slides taken at Panda-ma-Tenga in October became overheated on the return journey and would not stain. In addition, approximately 500 blood slides sent to the South African Institute for Medical Research, Johannesburg suffered a similar fate.

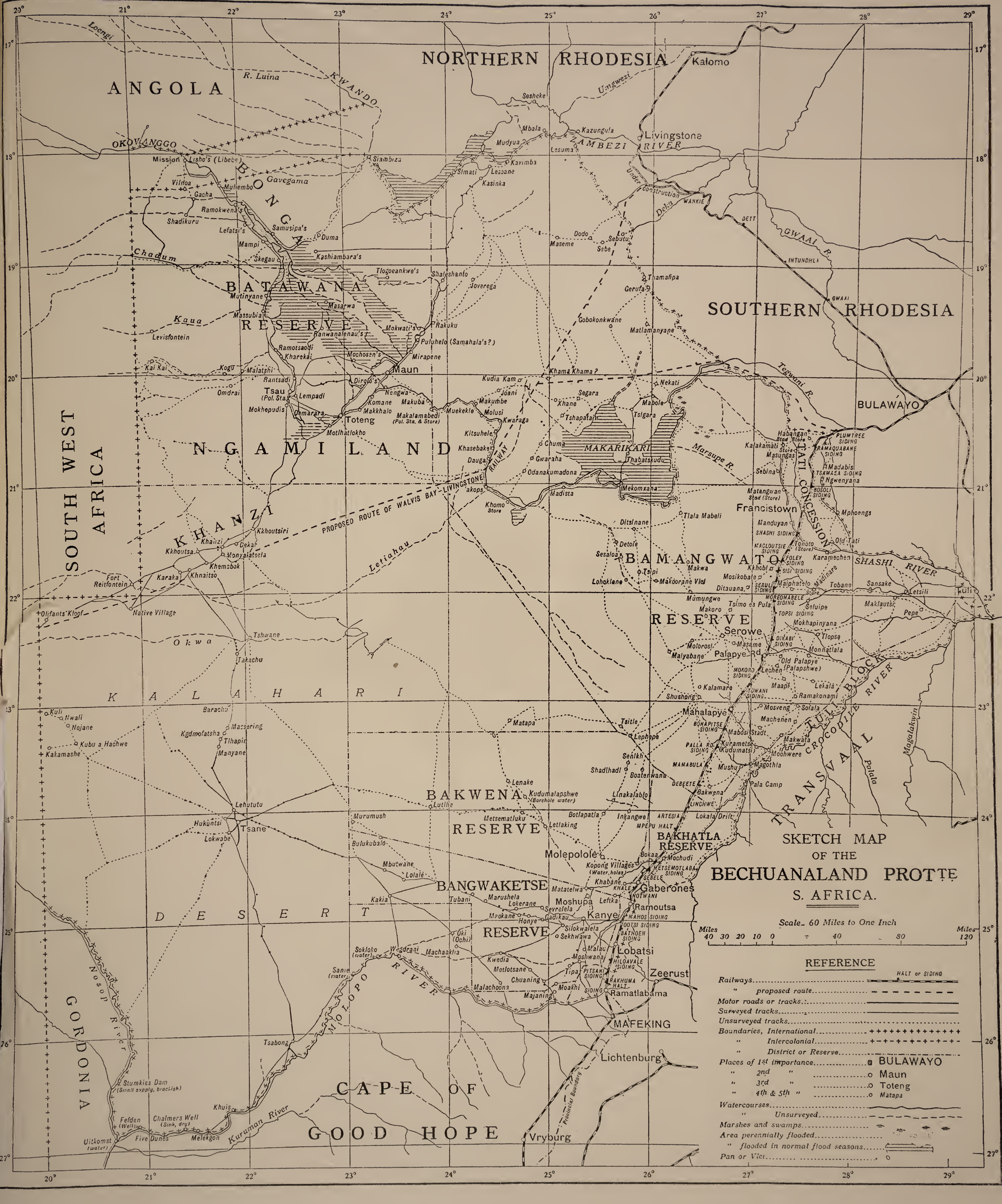
APPENDIX "D"

SPLENOMEGALY BY AGE

School or Place	Numbers of Children in age groups tested 0-1	1-4	5-10	11-15	Spleen class 0	1	2	3	4	5	
Map Reference A2.E											
Rachele, Kanye			16	34	50						Aug.1959
Lekonomo			28	25	53						
Kanye General	1	2	16		18		1				
Gaberones School (Batlokwa Natl.)			51		51						Oct.1959
Mochudi - Molefe School			50		50						
Map Reference B.E.											
Khama, Serowe			50		49		1				Oct.1959
Palapye			50		50						
Mahalapye			48	2	50						
Map Reference C.E.											
Francistown			50		50						Oct.1959
Tsessebe	1	2	23		25	1					
Jackalas I			16		16						
Map Reference D.E.											
Panda-ma-Tenga		10	36	14	47	6	5	2			Oct.1959

The splenomensure classes are after Hackett and Russell, as follows:-

Class 0 - Normal, nonpalpable.
" 1 - Palpable on deep inspiration only.
" 2 - Palpable on normal inspiration, not projecting more than half way from the costal margin to a horizontal line through the umbilicus.
" 3 - Projecting to the level of the umbilicus.
" 4 - Projecting half way from the umbilicus to a line through the symphusis pubis.
" 5 - Projecting lower than those in group 4.

SKETCH MAP
OF THE
BECHUANALAND PROTTE
S. AFRICA.
Scale_ 60 Miles to One Inch
Miles 40 30 20 10 0 40 80 Miles 120
REFERENCE
Railways
" proposed route
HALT or SIDING
Motor roads or tracks
Surveyed tracks
Unsurveyed tracks
Boundaries, International
" Intercolonial
" District or Reserve
Places of 1st importance BULAWAYO
" 2nd " Maun
" 3rd " Toteng
" 4th & 5th " Matapa
Watercourses
" Unsurveyed
Marshes and swamps
Area perennially flooded
" flooded in normal flood seasons
Pan or Vlei
NORTHERN RHODESIA
SOUTHERN RHODESIA
ANGOLA
SOUTH WEST AFRICA
NGAMILAND
BATAWANA RESERVE
BONGA
KHANZI
BAMANGWATO RESERVE
TATI CONCESSION
TULI BLOCK
TRANSVAAL
BAKWENA RESERVE
BAKHATLA RESERVE
BANGWAKETSE RESERVE
KALAHARI DESERT
GORDONIA
CAPE OF GOOD HOPE
MAKARIKARI
PROPOSED ROUTE OF WALVIS BAY-LIVINGSTONE RAILWAY
Kalomo
Livingstone
ZAMBEZI RIVER
Kazungula
Sesheke
Mbala
Lesuma
Mudyua
Kavimba
Simati
Lesoane
Kasinka
Siambiza
KWANDO
R. Luina
Loangi
Ungwezi
Under Construction
Deka
WANKIE
DETT
GWAAI R.
INTUNDHLA
GWAAI
OKOVANGGO
Mission
Lisho's (Libebe)
Vilnoa
Muhembo
Gavegama
Gacha
Ramokwena's
Shadikuru
Lefatsi's
Samusipa's
Duma
Mampi
Kashiambara's
Skegau
Chadum
Tlogoeankwe's
Shaleshanto
Joverega
Mutinyane
Masarwa
Massubia
Kaua
Levisfontein
Ranwanalenau's
Mokwati's
Rakuku
Puluhelo (Samahala's?)
Ramotsaodi
Kharekai
Mochosen's
Mirapene
Kai Kai
Kogu
Malatshi
Maun
Rantsadi
Omdrai
Tsau (Pol. Sta.)
Lempadi
Diroto's
Nengwa
Komane
Makuba
Makkhalo
Makalamabedi (Pol. Sta. & Store)
Mokhopudis
Demarara
Toteng
Motlhatlokho
Dodo
Maseme
Sebe
Sebutu
Thamafipa
Gerufa
Gobokonkwane
Matlamanyane
Khama Khama?
Kudia Kam
Joani
Makumbe
Muekekle
Molusi
Kwaraga
Kitsuhele
Khasebake
Dauga
Segara
Xhane
Tshapatali
Nekati
Mabole
Tsigara
Chuma
Gwaraha
Odanakumadona
Thabatskudu
Mekomrana
Madista
Khomo Store
Tegwani R.
BULAWAYO
PLUMTREE SIDING
Habangan Stad Store
Kalakamati
Masungas
RAMAQUABANE SIDING
Madabis
TSAMASA SIDING
Ngwenyana
Sebina
Marsupe R.
BOSOLI SIDING
Matangwan Stad (Store)
Francistown
Mphoengs
Manduyan
SHASHI SIDING
Old Tati
Tlala Mabeli
Ditsinane
Detole
Sesaloa
Tsipi
Makwa
Makoorane Vlei
Lohaklane
Mosikobale
Ditauana
MACLOUTSIE SIDING
Tonoto (Store)
Karamechen
SHASHI RIVER
Khobi
FOLEY SIDING
SISI SIDING
SERULE SIDING
Maiphatelo
Madinare
Tobane
Sansake
Letsili
Tuli
Mumungwe
Tsimo es Pula
MOREOMABELE SIDING
Makoro
TOPSI SIDING
Seluipe
Maklautsi
Pepe
Mokhapinyana
Serowe
Tlopsa
DIKABI SIDING
Moroosi
Masame
Monnatlala
Malyabane
Palapye Rd
Old Palapye (Palapshwe)
MOKORO SIDING
Lechen
Kalamare
Maapi
Lekala
TOWANI SIDING
Ramakonami
Shushong
CROCODILE RIVER
Mahalapye
Mosveng
Solala
Machenen
BONAPITSE SIDING
Mabosi Stadt
Makwata
Matapa
Tsitle
Lephepe
PALLA RD SIDING
Kurametse (Kudumatsi)
Moohwere
Senikh
MAMABULA
Mushu
Magothla
Shadlhadi
Boatenwana
DEBEETE
Pala Camp
Polala
Magalakwin
Lenake
Kudumalapshwe (Borehole water)
Linakalablo
Bakwena
LINCHWE
Lutlhe
Botlapatla
Inkangwe
ARTESIA
Lokala Drift
MPEPU HALT
Murumush
Metsematluku
Letlaking
Bulukubalo
Molepolole
Bokaa
Mochudi
Kopong Villages (Water holes)
METSEMOTLABA SIDING
Mbutwane
Lotale
SEBELE
Matatelwa
Khabane
KHALE
Gaberones
Kakia
Tubani
Marushela
Lokerane
Moshupa
Leftka
NOTWANI
Ramoutsa
Sevrelela
Mookane
Gadikau
Honye
Kanye
MAHOS SIDING
OOTSI SIDING
Oki (Ochi)
Silokwalela
Sekhwawa
BATHOEN SIDING
Malau
Lobatsi
Sokloko (water)
Wegdraai
Machaaklia
Moshwanai
HILDAVALE SIDING
Kwedia
Sane (water)
Motlotsane
Tipa
PITSANI SIDING
Zeerust
RAKHUMA HALT
Chuaning
Malachoona
Moakhi
Majaning
SIDING
Ramatlabama
MOLOPO RIVER
MAFEKING
Lichtenburg
Provincial Boundary
Vryburg
Tsabong
Nosop River
Stumkies Dam (Small supply, brackish)
Khuis
Kuruman River
Fefden (Well)
Chalmers Well (Sink, dry)
Uitkomst (water)
Five Dunes
Melekgon
Kuli
Nwali
Nojane
Kubu a Hachwe
Kakamashe
Barachu
Massering
Kgdmofatsha
Tlhapin
Manyane
Lehututu
Hukuntsi
Tsane
Lokwabe
Okwa
Tshwane
Takachu
Letiahau
Kkhoutsiri
Khanzi
Dekar
Kkhoutsa
Monyaltsela
Khemsbok
Karaka
Khnaitso
Fort Reitfontein
Olifants Kloof
Native Village
20° 21° 22° 23° 24° 25° 26° 27° 28° 29°
17° 18° 19° 20° 21° 22° 23° 24° 25° 26° 27°

STATION ALL STATIONS BECHUANALAND PROTECTORATE

RETURN OF DISEASES, INJURIES AND CAUSES OF DEATH FOR THE YEAR 1959*

DISEASES	IN-PATIENTS				OUT-PATIENTS		
	†Remaining in Hospital at end of 1958	Yearly Total		‡Total Cases Treated	¶Remaining in Hospital at end of 1959	Male	Female
		Admissions	Deaths				
A.							
1. Tuberculosis of respiratory system ...	124	622	61	746	197	1,348	1,421
2. Tuberculosis of meninges and central nervous system	1	14	8	15	1	4	2
3. Tuberculosis of intestines, peritoneum and mesenteric glands	4	40	-	44	7	193	206
4. Tuberculosis of bones and joints ...	7	65	1	72	13	73	66
5. Tuberculosis, all other forms	12	63	2	75	4	471	472
6. Congenital syphilis	1	7	1	8	-	223	288
7. Early syphilis	-	14	-	14	1	877	1,151
8. Tabes dorsalis	-	-	-	-	-	-	1
9. General paralysis of insane	-	1	1	1	-	2	-
10. All other syphilis	1	24	1	25	-	942	2,537
11. Gonococcal infections	2	73	-	75	1	7,086	12,472
12. Typhoid fever	3	5	-	8	-	1	-
13. Paratyphoid fever and other Salmonella infections	-	-	-	-	-	-	1
14. Cholera	-	-	-	-	-	-	-
15. Brucellosis (undulant fever)	-	-	-	-	-	-	-
16. (a) Bacillary dysentery	-	25	2	25	-	102	131
(b) Amoebiasis	2	50	2	52	3	114	132
(c) Other unspecified forms of dysentery	-	6	-	6	-	271	405
17. Scarlet fever	-	-	-	-	-	12	3
18. Streptococcal sore throat	1	59	-	60	-	972	1,513
19. Erysipelas	-	-	-	-	-	-	-
20. Septicaemia and pyaemia	1	8	3	9	-	4	2
21. Diphtheria	1	70	15	71	1	41	40
22. Whooping cough	-	58	1	58	4	888	1,096
23. Meningococcal infections	-	15	8	15	2	6	4
24. Plague	-	-	-	-	-	-	-
25. Leprosy	1	7	-	8	3	19	27
26. Tetanus	-	11	3	11	-	14	4
27. Anthrax	-	-	-	-	-	1	-
28. Acute poliomyelitis	1	1	-	2	-	2	-
29. Acute infectious encephalitis	-	2	2	2	-	-	2
30. Late effects of acute poliomyelitis and acute infectious encephalitis	1	-	-	1	-	4	4
Total carried forward	163	1,240	111	1,403	237	13,669	21,980

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* *This form is adapted in accordance with the "Manual of the International Statistical Classification of Diseases, Injuries and Causes of Death, World Health Organisation, Geneva, 1948.*

† i.e., the year previous to that for which the return is made.

‡ "Total cases treated" will, of course, include those remaining in Hospital at the end of the previous year.

... carried on to the next year's Return.

STATION ALL STATIONS

RETURN OF DISEASES, INJURIES AND CAUSES OF DEATH FOR THE YEAR 1959 *

DISEASES	IN-PATIENTS †Remaining in Hospital at end of 1958	IN-PATIENTS Yearly Total Admissions	IN-PATIENTS Yearly Total Deaths	IN-PATIENTS ‡Total Cases Treated	IN-PATIENTS ¶Remaining in Hospital at end of 1959	OUT-PATIENTS Male	OUT-PATIENTS Female
Brought forward	163	1,240	111	1,403	237	13,669	21,980
Smallpox	-	1	1	1	-	2	2
Measles	3	252	-	255	4	1,099	1,256
Yellow fever	-	-	-	-	-	-	-
Infectious hepatitis	-	22	5	22	1	37	30
Rabies	-	3	2	3	-	1	2
(a) Louse-borne epidemic typhus ...	-	-	-	-	-	-	-
(b) Flea-borne epidemic typhus (murine)	-	-	-	-	-	-	-
(c) Tick-borne epidemic typhus ...	-	-	-	-	-	3	2
(d) Mite-borne typhus	-	-	-	-	-	-	-
(e) Other and unspecified typhus ...	-	-	-	-	-	3	2
(a) Vivax malaria (benign tertian) ...	-	5	-	5	-	8	8
(b) Malariae malaria (quartan) ...	-	-	-	-	-	-	-
(c) Falciparum malaria (malignant tertian)	1	130	4	131	-	1,686	1,429
(d) Blackwater fever	-	-	-	-	-	-	-
(e) Other and unspecified forms of malaria	-	5	-	5	-	82	46
(a) Schistosomiasis vesical (S. Laematobium)	-	19	-	19	-	150	79
(b) Schistosomiasis intestinal (S. mansoni)	-	-	-	-	-	-	-
(c) Schistosomiasis pulmonary (S. japonicum) ... –	-	-	-	-	-	-	-
(d) Other and unspecified schistosomiasis	-	3	-	3	-	6	1
Hydatid disease	1	2	1	3	-	-	-
(a) Onchocerciasis	-	-	-	-	-	-	-
(b) Loiasis	-	-	-	-	-	-	-
(c) Filariasis (bancrofti)	1	2	-	3	-	3	-
(d) Other filariasis	-	-	-	-	-	-	-
Ankylostomiasis	-	-	-	-	-	1	-
(a) Tapeworm infestation and other cestode infestations	1	46	-	47	-	350	300
(b) Ascariasis ... –	-	2	-	2	-	148	163
(c) Guinea worm (dracunculosis) ...	-	-	-	-	-	-	-
(d) Other disease due to helminths ...	-	3	-	3	-	47	42
(a) Lymphogranuloma venereum ...	-	-	-	-	-	14	4
(b) Granuloma inguinale, venereal ...	-	2	-	2	-	14	13
Total carried forward	170	1,737	124	1,907	242	17,323	25,359

STATION ALL STATIONS

RETURN OF DISEASES, INJURIES AND CAUSES OF DEATH FOR THE YEAR 1959 *

DISEASES	IN-PATIENTS †Remaining in Hospital at end of 1958	IN-PATIENTS Yearly Total Admissions	 Yearly Total Deaths	‡Total Cases Treated	¶Remaining in Hospital at end of 1959	OUT-PATIENTS Male	 Female
Brought forward	170	1,737	124	1,907	242	17,323	25,359
43. (c) Other and unspecified venereal diseases	-	-	-	-	-	56	28
(d) Foodpoisoning infection and intoxication	-	4	-	4	-	6	10
(e) Relapsing fever	-	3	-	3	-	3	2
(f) Leptospirosis icterohaemorrhagica (Weil's disease)	-	-	-	-	-	-	-
(g) Yaws	-	-	-	-	-	14	8
(h) Chickenpox	1	6	-	7	-	225	182
(i) Dengue	-	1	-	1	-	13	14
(j) Trachoma	-	17	-	17	-	55	87
(k) Sandfly fever	-	1	-	1	-	1	-
(l) Leishmaniasis	-	-	-	-	-	-	-
(m) —a Trypanosomiasis gambiensis	-	-	-	-	-	-	-
—b Trypanosomiasis rhodesiensis	2	46	5	48	7	32	14
—c Other and unspecified Trypanosomiasis	-	-	-	-	-	-	-
(n) Dermatophytosis	-	4	-	4	-	138	185
(o) Scabies	-	-	-	-	-	452	449
(p) All other diseases classified as infective and parasitic	1	12	-	13	1	288	257
44. Malignant neoplasm of buccal cavity and pharynx	-	2	-	2	-	4	1
45. Malignant neoplasm of oesophagus ...	-	1	-	1	-	1	-
46. Malignant neoplasm of stomach ...	-	6	5	6	-	4	7
47. Malignant neoplasm of intestine, except rectum	-	4	1	4	-	4	-
48. Malignant neoplasm of rectum ...	-	2	-	2	2	2	-
49. Malignant neoplasm of larynx	-	2	1	2	-	-	-
50. Malignant neoplasm of trachea, and of bronchus and lung not specified as secondary	-	2	1	2	-	3	2
51. Malignant neoplasm of breast	-	5	2	5	1	-	11
52. Malignant neoplasm of cervix uteri ...	-	23	3	23	1	-	31
53. Malignant neoplasm of other and unspecified parts of uterus	-	-	-	-	-	-	10
54. Malignant neoplasm of prostate ...	-	2	1	2	-	1	-
55. Malignant neoplasm of skin	2	18	1	20	1	24	17
56. Malignant neoplasm of bone and connective tissue	1	7	-	8	-	10	7
Total carried forward	177	1,905	144	2,082	255	18,659	26,681

Station ALL STATIONS

RETURN OF DISEASES, INJURIES AND CAUSES OF DEATH FOR THE YEAR 1959 *

	IN-PATIENTS					OUT-PATIENTS	
DISEASES	†Remaining in Hospital at end of 1958	Yearly Total Admissions	Yearly Total Deaths	‡Total Cases Treated	¶Remaining in Hospital at end of 1959	Male	Female
Brought forward	177	1,905	144	2,082	255	18,659	26,681
57. Malignant neoplasm of all other and unspecified sites	2	16	5	18	1	30	22
58. Leukaemia and aleukaemia	-	3	2	3	-	2	-
59. Lymphosarcoma and other neoplasms of lymphatic and haematopoietic system	-	-	-	-	-	-	1
60. Benign neoplasms and neoplasms of unspecified nature	1	135	1	136	2	73	370
1 Nontoxic goitre	-	-	-	-	-	2	17
62. Thyrotoxicosis with or without goitre	-	1	-	1	-	1	4
63. Diabetes mellitus	-	4	-	4	-	2	6
64. (a) Beriberi	-	2	-	2	-	4	13
(b) Pellagra	1	16	-	17	2	274	422
(c) Scurvy	-	123	-	123	13	212	625
(d) Other deficiency states	5	169	19	174	10	2,062	3,553
65. (a) Pernicious and other hyper chromic anaemias	-	2	-	2	-	-	-
(b) Iron deficiency anaemias (hypochromic)	1	25	3	26	1	203	708
(c) Other specified and unspecified anaemias	-	18	6	18	-	118	363
66. (a) Asthma	-	101	1	101	3	734	914
(b) All other allergic disorder, endocrine, metabolic and blood diseases	1	42	4	43	-	453	572
67. Psychoses	1	14	1	15	-	33	46
68. Psychoneuroses and disorders of personality	1	35	-	36	30	38	101
69. Mental deficiency	-	10	-	10	-	8	15
70. Vascular lesions affecting central nervous system	-	23	7	23	1	22	14
71. Nonmeningococcal meningitis	-	7	-	7	-	4	4
72. Multiple sclerosis	1	-	-	1	-	-	-
73. Epilepsy	1	28	-	29	7	81	54
74. Inflammatory diseases of eye	3	115	-	118	-	2,853	3,274
75. Cataract	-	30	-	30	3	134	176
76. Glaucoma	-	5	-	5	-	26	19
77. (a) Otitis externa	1	5	-	6	-	270	379
(b) Otitis media and mastoiditis	4	35	-	39	-	720	798
(c) Other inflammatory diseases of ear	-	4	-	4	-	310	458
78. (a) All other diseases and conditions of eye	-	60	-	60	2	451	497
Total carried forward	200	2,933	193	3,133	330	27,779	40,106

Station ALL STATIONS

RETURN OF DISEASES, INJURIES AND CAUSES OF DEATH FOR THE YEAR 1959 *

DISEASES	IN-PATIENTS †Remaining in Hospital at end of 1958	Yearly Total Admissions	Yearly Total Deaths	‡Total Cases Treated	¶Remaining in Hospital at end of 1959	OUT-PATIENTS Male	Femal
Brought forward	200	2,933	193	3,133	330	27,779	40,10
(b) All other diseases of the nervous system and sense organs	4	48	-	52	5	252	38
79. Rheumatic fever	2	21	-	23	2	40	5
80. Chronic rheumatic heart disease ...	4	38	5	42	2	32	5
81. Arteriosclerotic and degenerative heart disease	1	36	9	37	3	31	2
82. Other disease of heart	2	69	3	71	3	166	25
83. Hypertension with heart disease ...	-	15	2	15	1	20	3
84. Hypertension without mention of heart	-	12	-	12	-	86	15
85. Diseases of arteries	-	7	-	7	-	5	
86. Other diseases of circulatory system	3	46	6	49	2	76	7
87. Acute upper respiratory infections ...	2	167	3	169	2	4,797	6,32
88. Influenza	3	361	1	364	3	2,151	2,75
89. Lobar pneumonia	7	199	17	206	5	265	25
90. Bronchopneumonia	13	529	52	542	10	778	84
91. Primary atypical, other and unspecified pneumonia	1	78	4	79	1	108	9
92. Acute bronchitis	-	265	5	265	3	3,837	4,88
93. Bronchitis, chronic and unqualified	1	136	2	137	-	2,222	2,57
94. Hypertrophy of tonsils and adenoids	3	88	-	91	-	640	88
95. Empyema and abscess of lung ...	-	4	-	4	-	1	
96. Pleurisy	-	44	-	44	1	69	4
97. (a) Pneumoconiosis	-	2	-	2	-	1	
(b) All other respiratory diseases	-	28	-	28	-	1,050	91
98. (a) Dental caries	-	6	-	6	-	1,368	2,10
(b) All other diseases of teeth and supporting structures	2	49	-	51	-	585	84
99. Ulcer of stomach	-	6	-	6	1	13	1
100. Ulcer of duodenum	-	3	-	3	-	4	
101. Gastritis and duodenitis	3	46	-	49	-	755	1,19
102. Appendicitis	6	85	1	91	1	49	76
103. Intestinal obstruction and hernia ...	1	40	4	41	-	161	93
104. (a) Gastro-enteritis and colitis between 4 weeks and 2 years ...	4	280	36	284	3	4,041	4,034
(b) Gastro-enteritis and colitis, ages 2 years and over	2	135	13	137	4	2,060	2,50
(c) Chronic enteritis and ulcerative colitis	3	155	8	158	4	277	37
Total carried forward	267	5,931	364	6,198	386	53,719	71,94

STATION ALL STATIONS

RETURN OF DISEASES, INJURIES AND CAUSES OF DEATH FOR THE YEAR 1959 *

DISEASES	IN-PATIENTS					OUT-PATIENTS	
	†Remaining in Hospital at end of 19 58	Yearly Total		‡Total Cases Treated	¶Remaining in Hospital at end of 19 59	Male	Female
		Admissions	Deaths				
Brought forward	267	5,931	364	6,198	386	53,719	71,941
5. Cirrhosis of liver	4	21	2	25	1	17	10
6. Cholelithiasis and cholecystitis ...	-	9	-	9	-	10	37
7. Other diseases of digestive system ...	1	103	6	104	1	5,024	8,234
8. Acute nephritis	-	32	7	32	1	37	28
9. Chronic, other and unspecified nephritis	-	6	-	6	-	192	112
0. Infections of kidney	1	23	-	24	1	338	529
1. Calculi of urinary system	-	3	-	3	-	4	6
2. Hyperplasia of prostate	1	8	-	9	1	28	-
3. Diseases of breast	1	34	-	35	1	13	384
4. (a) Hydrocele	-	19	-	19	1	69	-
(b) Disorders of menstruation ...	-	59	-	59	1	-	5,616
(c) All other disease of the genito-urinary system	12	445	3	457	11	1,434	4,306
5. Sepsis of pregnancy, childbirth and the puerperium	-	24	1	24	-	-	120
6. Toxaemias of pregnancy and the puerperium	-	28	1	28	-	-	30
7. Haemorrhage of pregnancy and childbirth	3	76	2	79	-	-	73
3. Abortion without mention of sepsis or toxaemia	2	196	2	198	3	-	434
. Abortion with sepsis	-	10	-	10	-	-	45
. (a) Other complications of pregnancy, childbirth and puerperium	9	302	28	311	9	-	4,971
(b) Delivery without complications	65	3,302	-	3,367	45	-	2,023
1. Infections of skin and subcutaneous tissue	12	233	1	245	3	4,662	4,925
. Arthritis and spondylitis	1	62	-	63	1	482	588
. Muscular rheumatism and rheumatism, unspecified	3	121	-	124	3	5,396	7,776
. Osteomyelitis and periostitis	2	36	-	38	1	53	34
. Ankylosis and acquired musculo-skeletal deformities	-	1	-	1	-	17	9
. (a) Chronic Ulcer of Skin (including tropical ulcer)	1	10	-	11	-	100	102
(b) All other diseases of skin ...	4	127	-	131	1	2,569	3,106
(c) All other diseases of musculo-skeletal system	8	89	-	97	4	846	622
7. Spina bifida and meningocele ...	-	-	-	-	-	3	1
8. Congenital malformations of circulatory system	-	-	-	-	-	5	10
Total carried forward	397	11,310	417	11,707	475	75,018	116,072

STATION ALL STATIONS

RETURN OF DISEASES, INJURIES AND CAUSES OF DEATH FOR THE YEAR 1959 *

DISEASES	IN-PATIENTS				OUT-PATIENTS		
	†Remaining in Hospital at end of 1958	Yearly Total		‡Total Cases Treated	¶Remaining in Hospital at end of 1959	Male	Female
		Admissions	Deaths				
Brought forward	397	11,310	417	11,707	475	75,018	116,072
129. All other congenital malformations	-	7	-	7	-	32	40
130. Birth injuries	-	7	3	7	-	2	-
131. Postnatal asphyxia and atelectasis ...	8	87	13	87	-	38	47
132. (a) Diarrhoea of newborn (under 4 weeks)	-	7	1	7	1	306	388
(b) Ophthalmia neonatorum	-	3	-	3	-	23	39
(c) Other infections of newborn ...	-	8	1	8	-	27	44
133. Haemolytic disease of newborn ...	-	2	1	2	-	2	4
134. All other defined diseases of early infancy	11	1,027	2	1,038	11	638	641
135. Ill-defined diseases peculiar to early infancy and immaturity, unqualified	-	41	37	41	1	101	80
136. Senility without mention of psychosis	-	9	3	9	-	51	89
137. (a) Pyrexia of unknown origin ...	-	40	3	40	3	101	80
(b) Observation, without need for further medical care	22	2,728	-	2,750	60	1,422	5,073
(c) All other ill-defined causes of morbidity	13	283	11	296	6	2,076	4,911
Accidents, Poisonings, and Violence (External Cause) A.E. 138. Motor vehicle accidents	5	69	1	74	3	83	33
139. Other transport accidents	2	51	-	53	3	178	61
140. Accidental poisoning	-	49	3	49	1	41	39
141. Accidental falls	2	193	2	195	8	610	364
142. Accident caused by machinery ...	-	47	-	47	2	46	9
3. Accident caused by fire and explosion of combustible material	4	164	11	168	12	688	501
144. Accident caused by hot substance, corrosive liquid, steam and radiation	2	24	2	26	1	189	195
145. Accident caused by firearm	-	4	-	4	-	10	1
146. Accidental drowning and submersion	-	1	-	1	-	2	1
147. Foreign body entering eye and adnexa	1	12	-	13	2	162	67
Foreign body entering other orifice	-	37	1	37	-	174	116
Accidents caused by bites and stings of venomous animals and insects ...	-	62	-	62	3	302	183
Other accidents caused by animals ...	6	65	1	71	1	299	100
All other accidental causes	8	208	-	216	3	1,946	750
148. Suicide and self inflicted injury ...	-	7	2	7	-	69	2
149. Homicide and injury purposely inflicted by other persons (not in war)	4	140	1	144	2	397	358
150. Injury resulting from operations of war	-	-	-	-	-	-	-
Total carried forward	477	16,692	516	17 ,169	598	85,033	130,288

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